

# AUTOMOTIVE INDUSTRIES

## AUTOMOBILE

Reg. U. S. Pat. Off.



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Automotive Industries

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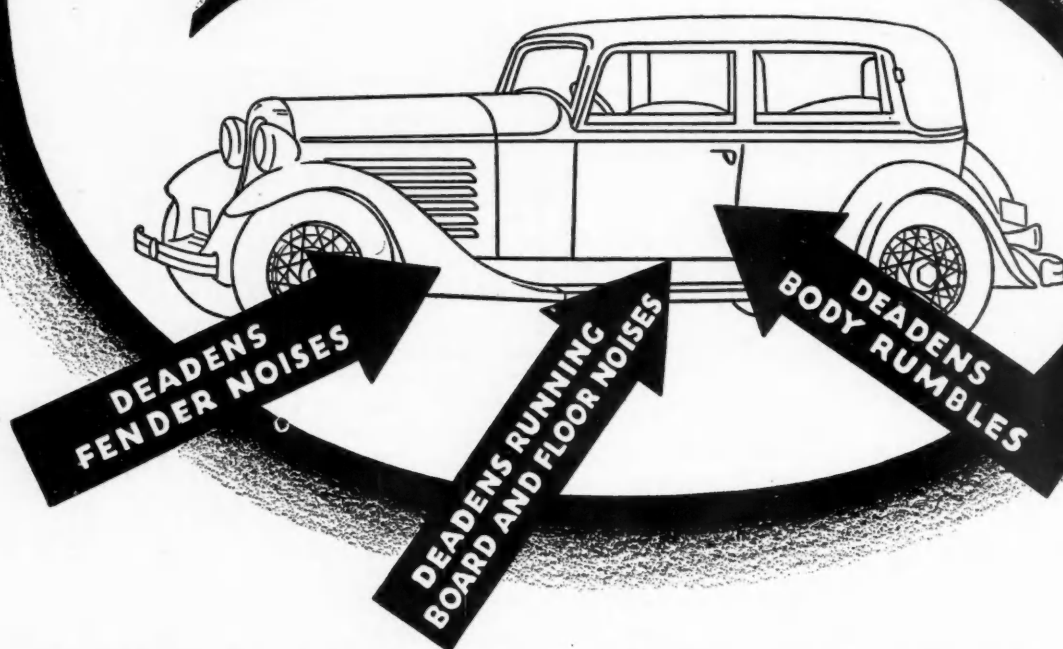
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December 23, 1933

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## Meeting N.I.R.A. Requirements in Employee Representations Plans

**R**ECENTLY a shrewd student of industrial relations remarked that the success of an employer's dealings with labor in times of stress depends entirely upon whatever credit of good will he may have built up in the past. Certainly without this prior credit an employee representation plan is but a feeble instrument in stemming a tide of labor unrest.

Since the introduction of the N.A.C.C. and the A.P.E.M. codes there has been a widespread application of employee representation plans in the automotive industry. Whether this movement is of lasting significance depends upon the present temper of labor and, to a large extent, upon the sincerity of the employer and the skill with which the plan has been drawn up and put into effect. Despite the hazards surrounding the launching of employee representation plans at this time, in principle they do offer a management tool of greatest importance and if properly directed will serve two functions. (1) Acquaint management with the attitude of employees. (3) Provide the means whereby management can communicate its policies and problems to the employee.

Although employee representation plans have been in operation

Indisputable freedom for workers in selecting representatives should be the first and predominating consideration. Two general types of plans are available

by Joseph Geschelin

Engineering Editor, Automotive Industries

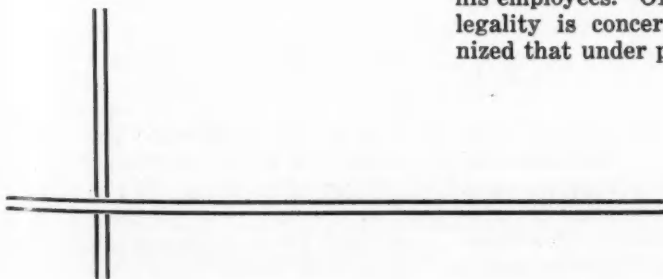
for about fifteen years, experience under the Codes indicates the desirability of revising some of their classical principles to meet the practical needs of today's labor problems as well as to permit of better fusion with the more or less dynamic interpretations of Article 7A of the NIRA.

It is evident after listening to the experience of those who have experimented in this field that while a successful employee representation plan primarily must meet the immediate practical needs of the situation, it must also be skillfully drafted so as to comply with the legal aspects of the plan as a contract between the employer and his employees. Of course, so far as legality is concerned, it is recognized that under present conditions

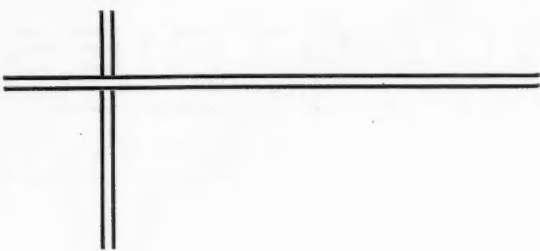
the employer is the only responsible contracting party and is the only one rigidly bound by its provisions. Nevertheless from a strictly practical point of view if the plan is drawn up so as to meet certain interpretations of Article 7A of the NIRA, the employer at least has the semblance of right on his side and is placed in a better strategical position in his dealings with Regional Labor Boards or the National Labor Board.

Probably the first question confronting the employer who is interested in setting up an employee representation plan is the decision as to the type of plan to be adopted; and as will be shown later there are at least two distinct types each of which has its adherents.

Consequently the problem of selection becomes a matter for the best judgment of the individual company, tempered perhaps, by the practical needs of its labor problem. Nevertheless there are some who hold that the form of the plan is really immaterial so long as the company is sincere in its desire to







give its employees the full benefits of the right to collective bargaining affirmed by the NIRA. With this in mind, many personnel men believe that the most successful plan is one characterized by extreme simplicity, the absence of red tape and formality, and particularly one which has the right method of approach to the mutual problems of the employer and his employees.

In the light of interpretations of Article 7A of the NIRA, some experts in this field recommend the following guiding principles in the drafting of any new plan:

1. That the plan must first be sold to the employees.

2. That employees must be given time to study and consider a tentative draft of a plan before it is adopted by the company. Moreover the employees should be given the opportunity to make suggestions and recommendations as to changes.

3. That it would be advisable to set up a constitutional convention to ratify the draft of the final plan and then submit the plan to a vote of all eligible employees.

4. That the plan should provide definite machinery for collective bargaining and make provision for a final decision on questions brought up before the conference. This definitely demands machinery for arbitration.

5. Restrictions on the qualification of employee representative should be very limited to avoid discontent. Qualifications such as a long period of service, American citizenship, etc., may meet with considerable resistance.

Although the foregoing represents the opinion of a large body of liberal minded experts in the personnel field, the conclusions are by no means unanimous nor are they free from considerable controversy. The decision in any individual case still must depend upon the attitude of the management and its interpretation of Article 7A. Nevertheless it is well to bear in mind that the omission, intentionally or otherwise, of these principles in some existing plans has been the occa-

sion of considerable trouble in recent months.

Another moot question is whether the employee representative should be on the payroll or whether he may be an outsider. Practically everybody feels that the employee representative should be on the company's payroll. While this is a reasonable conclusion, how is it to be reconciled with the collective bargaining provision of Article 7A which gives to employees the right to select representatives of their own choosing even though such representatives be union officials. In a few instances where unions have succeeded in organizing the employees of a plant this question has been taken care of by permitting the union to take over the arbitration of wages and hours while the employee representation plan handles the other problems such as welfare, working conditions, safety, etc.

### Plans Are of Two Types

Boiled down to their essentials, prevailing plans fall into two general types. The first with many local variations, is the form which, unfortunately, has been termed a company union in which the employee representatives meet in private council. Generally in this plan the council sits without the presence of management representatives, although in some plans the management representatives sit in at the council meetings in an advisory capacity, having no right to vote.

The second type is the joint council which provides for an equal representation of management and employees. This form usually contemplates the setting up of a number of active committees to handle

## Works Councils on the Increase

The number of employee-representation plans has increased substantially since the passage of the National Industrial Recovery Act. Of the plans for collective bargaining reported to the National Industrial Conference Board, 61.3 per cent of the employee-representation plans and 41.8 per cent of the labor-union agreements had been adopted since June 16, 1933, when the Recovery Act went into effect. The actual figures for the number of plans established since that date are 400 employee-representation plans and 174 labor-union agreements.

most of the actual adjustment of issues before they reach the joint council.

As might be expected, there is no degree of unanimity among personnel men as to the preferred type of plan. For example, in the automotive industry, both plans with variations have been adopted during the past few months. There is, however, much opposition to the company union type of plan because it is thought to be bad policy to permit employee representatives to meet privately since there is no control over the issues that they bring up and, also, because the group forms a majority opinion on any given issue which is hard to change in subsequent arbitration. On the other hand an equally influential group of people not only approve of the method but even recommend closed meetings of employee representatives under the joint conference plan to enable them to decide on the questions that should be brought up before a joint conference.

The Chrysler joint council plan which was described in *Automotive Industries*, Oct. 21, 1933, is an excellent example of the second type. In this plan employee representatives serve on the joint council with an equal number of management representatives.

Recent installations of the company union plan have a number of important variations reflecting the spirit of the management. For example, the plan put into effect by a large body builder sets up an employee council in which representation is based, so far as practicable, on the ratio of one representative to each 200 employees; the initial number of representatives is 19.

It provides that, "the company shall appoint five representatives referred to as Management Representatives whose function shall be



## How Cases Have Been Decided\*

Under Bethlehem Plan of Employees' Representation  
October, 1918, to June, 1933  
(Plants of Bethlehem Steel Co. and Pacific Coast Steel Corp.)

Subject	DISPOSITION				Total
	Affirma- tive	Nega- tive	With- drawn	Compro- mise	
Employment and working conditions.....	809	225	87	184	1305
Wages, piecework, bonus, tonnage schedules	515	303	77	251	1146
Safety and prevention of accidents.....	775	49	38	74	936
Practice, methods and economy.....	344	53	32	55	484
Health and works sanitation.....	346	23	36	48	453
Employees' transportation.....	305	56	34	36	431
Pensions and relief.....	464	77	21	39	601
Housing, domestic economies and living conditions.....	165	35	17	32	249
Education and publication.....	27	3	9	8	47
Athletics and recreation.....	37	4	9	5	55
Rules, ways and means.....	87	15	14	25	141
Miscellaneous.....	58	6	1	5	70
Total.....	3932	849	375	762	5918

It will be noted that two-thirds of the cases were decided in favor of the employees, with an additional 13 per cent compromised. In short, approximately four-fifths of the cases brought up by the employees have been decided favorably toward the employee over a period of years, with adverse decisions in but 14 per cent of the cases and withdrawals in 6 per cent.

It will be further noted that close to half of the cases have dealt with the fundamental economic subjects of employment, working conditions and wage rates, indicating that both employees and management have found this plan a satisfactory method of dealing with the most important problems.

\*From Bethlehem Review, Sept. 15, 1933.

to keep the management in touch with the employee representatives and represent the management in negotiations. They shall respond promptly to any request from the employee representatives and shall interview them from time to time with reference to matters of concern to the employees. Management representatives shall sit with employee representatives at meetings but in an advisory capacity only, having no right to vote."

Another form of plan which embodies the essential features of both general types has been adopted by a prominent automobile manufacturer. This plan provides for a council of employee representatives acting through five committees. The general committee holds monthly meetings as well as special meetings which may be called on occasion. The special committees meet monthly.

In this plan the company appoints a Management Special Representative to keep the management in touch with employee representatives and to represent the management in negotiation with the employee representatives, their officers and committees. He may attend any meeting of any joint committee but shall not be entitled to any vote.

The plan provides that, "The management may appoint regular management representatives equal to but not exceeding the number of employee representatives whose duty will be that of joint committeemen who shall form a general joint committee with employee representatives and such other joint committees as may be found necessary.

"In addition to the five committees set up by the employee repre-

sentative council, there is a provision for joint committees consisting of the committees of the employee representatives with the addition of the management's regular representatives who may be equal but shall not exceed in number the employee's representatives. The joint committees elect their own officers and arrange their own procedures subject to appeal.

While committee meetings of the council are held every month, on alternate months the committees meet as joint committees. There

is also a provision for an annual conference between all of the employee representatives and all representatives of the management, and a time and place determined by the joint committee on rules.

This plan, incidentally, embodies a definite procedure for adjustment which follows these steps:

Any matter which in the opinion of any employee requires adjustment, and which such employee has been unable to adjust with the foreman of his department, may be taken up by such employee, either in person or through any representative of his District in writing:

First: With the superintendent of his division.

Second: With the Management's Special Representative.

Third: With the Proper Joint Committee.

(Turn to page 774, please)

## Individual Bargaining Still a Factor

Summarizing the results of a survey just made public, the National Industrial Conference Board says:

Two definite conclusions may be drawn. In the first place, it is clear that individual bargaining has not in any way been eliminated by Section 7(a) of the Recovery Act. Since many of these companies are not of sufficient size to call for a representation plan, it seems likely that individual dealing will remain the basis of employer-employee relations in a majority of industrial establishments. The second general conclusion is that employee-representation plans have expanded greatly, both in number of companies affected and, particularly, in number of employees covered.

# The "Airflow" DeSoto

**A**MONG the popular-priced cars, the new "airflow" DeSoto for 1934 certainly seems to represent the most radical departure from the conventional, both in appearance and in mechanical design. While "streamlining" is to be the keynote of merchandising efforts, three other factors also seem to be of great importance.

Body room, and particularly body width, has been materially increased. Riding qualities have been improved by a re-distribution of weight occasioned by locating the engine over the front axle. Structural design is novel, in that the body structure itself takes the major stresses, the conventional frame being retained mainly for assembly purposes.



Moving the engine forward has permitted a forward shift of both front and rear seats, so that the rear seat is now ahead of the rear axle. This further contributes to rear-seat riding comfort.

Shifting the powerplant forward has increased the moment of inertia of the sprung masses around a transverse axis through the center of gravity, thereby reducing the angular acceleration around this axis due to forces impressed through either the front or the rear springs, and also has lowered the frequency of oscillation around this axis.

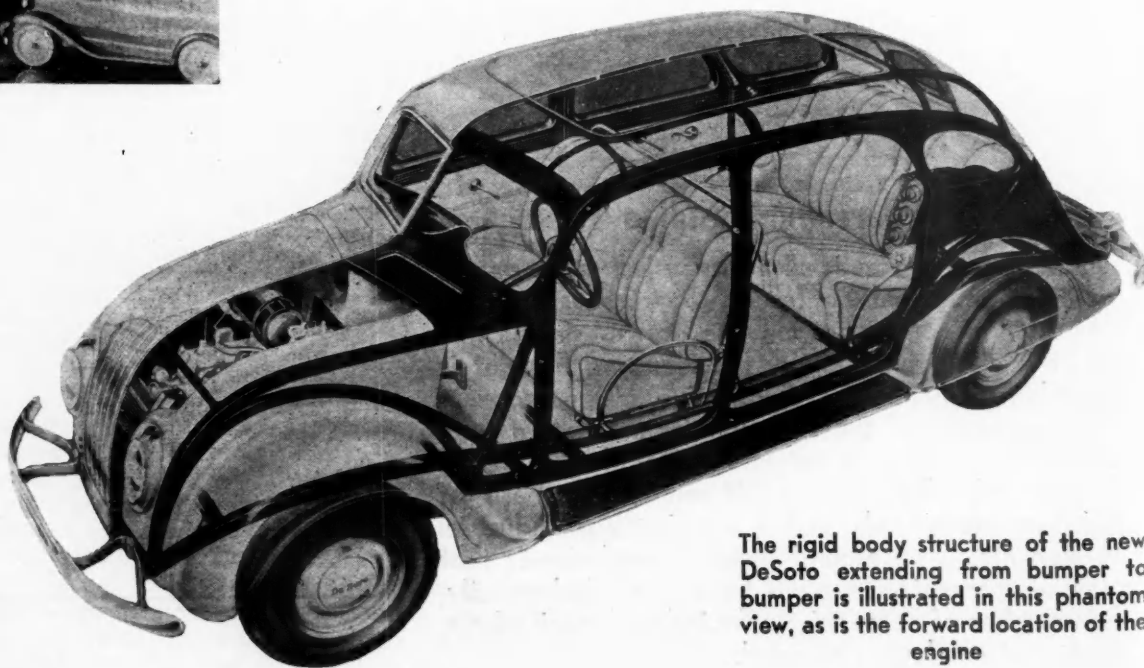
The net effect is a material reduction in vertical accelerations of the body, and in maximum amplitude of vertical body movement. Weight distribution in the new DeSoto closely approaches the theoretical optimum for minimum amplitudes of body displacement. The theory behind this re-distribution of weight will be explained further on in this article.

Walter P. Chrysler and Fred Zeder talk streamlining

Next in order of importance to improved riding qualities probably comes body room. The front of the car has been widened to allow seating three passengers in the front as well as the rear seat if necessary. To keep the appearance in balance, the nose is made very wide, and front fenders and running boards are quite narrow in appearance.

The resulting body lines give a streamlining effect which has not been approached in a relatively low-priced car heretofore. The wide front end, the recessing of headlamps into the nose of the car, the rounding off of the nose itself, the greater slant to the windshield, and the somewhat tapering rear body panels all help to reduce air resistance. In this latter respect the coupe is particularly striking. It is indicative of the reduction in air resistance achieved that, according to DeSoto engineers, with a 90-hp. powerplant, in spite of its increased frontal area, the car has a top speed in the neighborhood of 80 m.p.h.

Most of the structural strength and rigidity of the new DeSoto is provided by the body. Here there is a network of truss members, ex-



The rigid body structure of the new DeSoto extending from bumper to bumper is illustrated in this phantom view, as is the forward location of the engine

## A radically new design with reduced air resistance, improved riding qualities and a trussed body of unusual rigidity

by Athel F. Denham  
Field Editor, Automotive Industries

tending from bumper to bumper, which is said to distribute the stresses through the body and to eliminate the usual point of weakness at the dash.

Carrying the steel framework of the body to the front frame horns has been made possible by eliminating the conventional hood. With the engine directly over the axle, access to the top of the powerplant is through a lid type "hood" on top of the nose of the car, hinged at the rear. Valve tappets, etc., are reached by removing a front wheel, and wheel house panel, giving access to the side of the engine.

The shape of the engine compartment results in increased lateral clearance between engine and compartment wall, but somewhat less clearance on top, due to the higher location of the engine. The new

Rounded front end, recessed headlamps and vee-windshield are among the features of the new DeSoto. The front seat seats three

Full back view showing split rear window



position of the engine permits of mounting the fan on the engine crankshaft, thereby relieving the accessories drive of the fan load.

The design of the body framing was carefully worked out to secure maximum strength for a given weight. Thus vertical and diagonal members are joined to the sills at the spring hangers at both front and rear.

As regards the general appearance of the cars, this may be judged from the photographs. To the writer, the front overhang of the powerplant is not objectionable

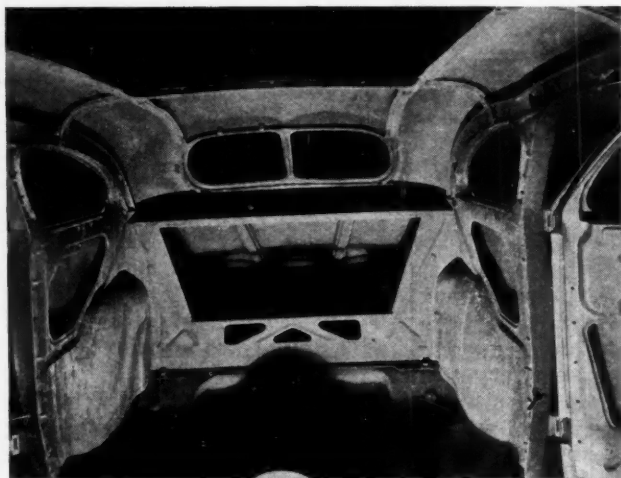
with the body lines used. The excellent shrouding of chassis parts by extending sheet metal downward deeper than usual at the front, probably accounts for some of this.

Body interiors, again, are quite striking. In addition to the unusual seat widths, there is more than conventional headroom. Much of the additional head room is due to a low floor height, a tunnel for the propeller shaft being provided in the rear compartment.

Seats are of modernistic design and built up on chromium-plated tubing, which latter is claimed to







Interior view of the girder construction at the rear of the body

add to their resilience. Since they are raised off the floor, cool air from the cowl ventilator and warm air from a heater in the front compartment can pass underneath them into the rear compartment. Interior trim strikes a new note. Headlining is plain, although relieved with some piping, and can be washed with a sponge, according to DeSoto engineers. Hand-brake control is by a push-pull lever mounted below the instrument panel, thus removing an obstruction from the driver's compartment.

All models have a large luggage space directly behind the rear seat; access to this space is through the back of the seat, which is hinged at the top. Five-passenger coupes have the auxiliary seats located within the body. These rear seats can be folded and the space thus vacated also used for luggage, if desired.

The effectiveness of the streamlining is indicated by the fact that when the front windows are lowered there is much less of a blast of air into the car than with conventional automobiles. Rear side windows can be cranked out at an angle to the body, so that the car can be ventilated by suction.

Wider windshields and increased visibility go with the wider body. The windshield is divided in the center, forming a Vee. Each half can be opened separately by a crank which operates a reel on which is wound a concave steel ribbon attached to the lower edge of the swinging windshield.

Steering columns and wheels have a rakish tilt, made possible by locating the steering gear well forward on the front cross-member. The drag link is located at right angles to the frame (cross-steering), ahead of the tubular front

axle, rather than behind it, an arrangement permitted by the concealing body lines. Kingpins are inclined at such angles that their axes produced intersect the ground at the center points of tire contact, thus giving center-point steering.

Let us now return for a moment to the theory behind the unusual weight distribution in the DeSoto. There are two factors which have a preponderant influence on riding qualities, namely, the frequency of oscillation and the relationship between the moment of inertia of the car and its wheelbase.

In an average car, the time it takes for the body and chassis, once disturbed, to be displaced, return past its original position, move to the extreme in the other direction, and back to its original position, is approximately 1/120th or 1/130th of a minute, and therefore the "oscillation frequency" is from 120 to 130 cycles per minute.

The maximum frequency which the human body can withstand without discomfort appears to be about 94 cycles per minute, and the best working range may be said to lie between 70 and 100 cycles per minute. It was desired to reduce the natural oscillating frequency of the Airflow DeSoto to bring it within that range.



The town sedan with blanked rear quarter

The single factor which mainly influences the natural period of vibration of any flexibly supported mass, such as an automobile chassis and body, is the relationship of weight to spring stiffness. The softer the spring, the more slowly it will set a given body weight in motion when the spring is deflected. On the other hand, the more weight there is for a given spring to displace, the less rapidly it can put that weight in motion. It is obvious, then, that oscillation frequency depends to a large extent on static spring deflection—the relationship of spring stiffness to weight on the spring.

Static deflection of the rear springs is quite satisfactory in the average automobile, but the front springs are structural members, in that they must guide the front axle and wheels, and this puts limitations on the permissible flexibility. The obvious solution was to use as soft front springs as possible consistent with requirements of stability and safety, and then shift weight toward the front to increase the static deflection. In the DeSoto the front springs were lengthened 8 in. and the entire chassis and body were shifted forward relative to the axles a matter of 20 in. Rear springs, incidentally, are 9 in. longer than fronts.

The other factor—relationship of moment of inertia to wheelbase—governs the amount of pitching motion of an automobile due to alternate striking of obstructions by front and rear wheels.

When the front wheels of an automobile hit a bump, the body tends to pivot both around the rear axle (by an amount depending on the length of wheelbase) and around a transverse axis through its center of gravity (an amount depending on its moment of inertia). The result in the average car is that, as the front of the car goes up, the rear goes down, the body pivoting about some transverse axis between its center of gravity and the rear

axle. Thus the rear springs are compressed, and when the rear wheels now hit the bump, the vertical acceleration of the rear of the body is increased by the precompression of the springs, resulting in the unpleasant pitching sensation familiar to rear-seat passengers.

What was aimed at in the DeSoto was such a moment of inertia of the sprung masses that the tendency of the car to rock about a transverse axis through its center of gravity is exactly counterbalanced by the tendency to pivot around the axles. It was considered impractical by DeSoto engineers to shift passengers and body forward sufficiently to get the proper weight distribution for the desired high static spring deflection in front, and it was therefore decided to shift the powerplant forward. It should be mentioned in this connection that "jounce space" (spring clearance

Streamlining is carried even further in the coupe. Inside "occasional" seats can be folded down for additional carrying space.



under static load) has been increased in the DeSoto for both the front and the rear springs.

As far as the remainder of the chassis is concerned, there is, as has been mentioned, a more powerful engine, developing 90 hp. with an iron head and 95 hp. with a Bohnalite aluminum head. Floating-

Power engine mountings are retained, as are inserted valve seats to reduce the necessity for valve grinding, and removable connecting rod liners for servicing simplicity.

The carburetion system includes an automatic choke and automatic manifold heat control. Operation of the automatic choke is by a sol-

## Details of the 1933 and 1934 De Sotos Compared

	1934	1933		1934	1933
Wheelbase .....	115	114 $\frac{3}{4}$	Change oil, summer.....	1500	1000 miles
Overall length, no bumpers .....	179 $\frac{1}{4}$	166 $\frac{3}{4}$	Winter .....	1000	500 miles
With bumpers .....	196	185 $\frac{1}{2}$	Gas-tank capacity .....	16 gals.	15 $\frac{1}{2}$ gals.
Tires .....	6.50/16	5.50/17	Muffler type .....	Reverse flow	Through type
Engine bore .....	3 $\frac{3}{8}$	3 $\frac{1}{4}$	Size .....	Oval, 3 $\frac{3}{4}$ by 8 $\frac{1}{4}$	5 in. diam.
Stroke .....	4 $\frac{1}{2}$	4 $\frac{3}{8}$	Length .....	24	24 in.
Displacement .....	241.5	217.8	Clutch facings, I. D. ....	6 $\frac{1}{8}$	6 $\frac{3}{8}$
Rated hp. ....	27.34	25.35	O. D. ....	9 $\frac{7}{8}$	9 $\frac{7}{8}$
Max. hp., 6.2 head.....	100	86-3400	Lining thickness .....	.125 and .133	.125
Max. hp., 5.4 head.....	95	79-3400	Transmission ratio, second speed .....	1.55	1.49
Port diam. intake .....	1 5/16	1 $\frac{1}{8}$	Low .....	2.81	2.59
Exhaust .....	1 $\frac{1}{4}$	1 5/16	Reverse .....	3.61	3.24
Valve lift .....	11/32	5/16	Oil capacity .....	2 $\frac{3}{4}$	3 $\frac{3}{8}$ pts.
Valve length .....	5 5/16	5 $\frac{1}{4}$	Prop. shaft diameter .....	2 $\frac{3}{4}$	2 in.
Spring pressure, valve open .....	107	78	Rear axle ratio .....	4.11	4.375
Valve closed .....	48	42	Ring gear teeth.....	37	35
Camshaft type .....	cast iron	forged	Pinion teeth .....	9	8
Drive chain width.....	1 in.	1 $\frac{1}{4}$	Axle shafts .....	Chr.	Molybdenum Chrome Nickel
Crankshaft bearings .....	steel-backed	bronze-backed	Rear axle road clearance..	8 $\frac{1}{2}$ in.	
Crankshaft diameter.....	2 $\frac{1}{2}$	2 $\frac{1}{4}$	Front axle type .....	Tubular	I-beam
Bearing area .....	49.1	44.2 sq. in.	Knuckle pivot bushings:		
No. counterweights .....	7	4	Diameter .....	7 $\frac{7}{8}$	3 $\frac{1}{4}$
Connecting-rod length.....	8 $\frac{3}{4}$	8 13/16	Length, upper .....	1 21/64	1 3/32
Lower bearing .....	removable	spun in	Length, lower .....	1 41/64	1 15/32
Diameter .....	2 $\frac{1}{8}$	1 15/16	Front axle clearance .....	7 $\frac{1}{2}$ in.	
Length .....	1 $\frac{1}{8}$	1 $\frac{1}{8}$	Parking brake drum diam.	6 in.	7 in.
Pistons .....	T-slot	steel strut	Drum material .....	C.I.	steel
Length .....	3 $\frac{7}{8}$	3 11/16	Lining width .....	2 $\frac{1}{2}$	2 in.
Piston-pin length .....	2 $\frac{7}{8}$	2 $\frac{3}{4}$	Lining length .....	18 $\frac{1}{4}$	21 13/32
Compression rings, type...	plain	Tungtite	Service brake drums.....	C.I.	Centrifuse
Width .....	1 $\frac{1}{8}$	9/64	Drum width .....	2 in.	1 $\frac{1}{2}$ in.
Oil-ring width .....	3/16	1 $\frac{1}{8}$	Lining wheel .....	22 5/32	20 7/32
Intake valve opens .....	TDC	6 deg. late	Tread, front .....	57	57 13/16
Intake closes .....	50 deg. late	46 deg. late	Rear .....	56 $\frac{1}{4}$	59 $\frac{1}{4}$
Exhaust opens .....	48 deg. early	42 deg. early	Springs, front length.....	43 $\frac{1}{2}$	35 $\frac{1}{2}$
Exhaust closes .....	2 deg. late	8 deg. late	Width .....	2 in.	1 $\frac{1}{4}$ in.
Radiator core thickness...	3 $\frac{1}{4}$ & 2 $\frac{3}{4}$	3 $\frac{1}{4}$	Rear length .....	52 $\frac{1}{2}$	53 $\frac{1}{2}$
Fan diameter .....	19 $\frac{1}{2}$	17	No. leaves, front.....	10	7
Mounting .....	crankshaft	engine bracket	Rear .....	9	7
Battery, No. plates.....	15	13	Steering type .....	Worm and Roller	Worm and Wheel
Capacity .....	100	84 amp. hrs.	Ratio .....	16.6	15 to 1
Distrib. breaker gap.....	.018	.020	Steer. wheel diam. ....	17 in.	18 in.
Generator, charging control	Voltage limit relay	3rd Brush	Pivot angle .....	9 deg.	7 deg.
Starter control .....	Solenoid	Coincidental	Wheels .....	steel-spoke	dem.-wood
Engine oil pressure.....	45 lb.	50 lb.	Rim width .....	4.50	3.25

enoid connected to the starting switch. Mixture-ratio control during the warm-up period is by a thermostat which actuates a cam controlling the position of the choke valve. Intake silencers are standard. Crankshafts are fully counterweighted now.

Radiators are considerably lower in relation to the powerplant, and are of the cross-flow type. A separate header tank was necessary with this design, and is located on a body panel beside the engine. A by-pass type of thermostat automatically controls the water temperature while maintaining circulation. A temperature indicator is provided on the dash.

The generator is provided with voltage regulation. Starter engagement is by positive-shift, the motor being started through a solenoid energized by pushing a button on the dash.

Clutches incorporate the new knife-edge release mechanism, which reduces the pedal pressure. Automatic clutch control, including a pendulum engagement-rate control, is optional at extra cost, as in the past.

Helical gears for all speeds are retained in the transmission, as is the freewheeling unit. A rear-axle ratio of 4.1 to 1 has been selected as giving the best combination of top speed and acceleration. Front axles continue of the tubular type, with ball thrust bearings in the steering knuckles.

Oilite springs between spring leaves are provided as formerly to eliminate squeaks and reduce inter-leaf friction. Spring covers are standard. Wider brake drums are provided in the hydraulic brake system. Standard wheel equipment consists of steel-spoke artillery wheels provided with steel cover

plates integral with the hub caps. They are 16 in. in diameter and carry 6.50 section air-wheel tires.

On the coupe the spare wheel and tire are concealed within the rear deck, which further improves the streamlining. Headlights are of the "flexbeam" type, with 32 cp. upper, and 21 cp. lower filaments. Added to the usual combinations of lighting thereby is a "country passing" position which causes the upper beam of the right lamp to illuminate the right side of the road, while the left headlamp has its beam depressed to avoid blinding the oncoming driver. Radio antennae are built into the bodies and provision is made on the panel for the installation of a radio control unit. The radio being offered as extra equipment is a Philco-Transitone operated through a dynamotor.

## Improved Front Suspension a Feature of Continental Beacon Line for 1934

FOR the 1934 season the Continental Automobile Company will concentrate its efforts on a single line—an improved Beacon offered in four body styles, standard coupe, standard two-door sedan, standard four-door sedan, and DeLuxe four-door sedan. Ace and Flyer models have been discontinued.

The principal mechanical improvement in the Beacon line is in the front-end suspension. The transverse spring and conventional I-beam axle have been retained, but instead of the short radius rods to the frame formerly used, there is now a wishbone type radius rod which connects to a frame cross-member at the transmission.

Lengthening of the radius rod reduces variations of caster angle in service, which in turn should result in greater freedom from shimmy.

An innovation, so far as American practice is concerned, is the adoption of a single shock absorber at the front end. It is installed at the center and reduces the resistance to relative motion between either front wheel and the frame, thus softening the springing action

and giving an easier ride. The shock absorber, of course, offers its maximum resistance when both front wheels are simultaneously subjected to a heavy road shock.

An improved boulevard ride particularly is claimed for this design. The arrangement also has made possible the lowering of the effective front end suspension stiffness, resulting in lower vertical body accelerations and an improved high-speed and rough-road ride. A claim for the wishbone construction is that it eliminates any tendency for the car to "wander."

All engine mountings are now of rubber, which has supplanted the former rubber-and-coil spring combination at the front end. Combustion chambers have been modified in design for smoother combustion conditions. Synchromesh transmissions are standard in the DeLuxe model.

Frame side members are heavier than formerly to increase resistance to body distortion.

In the bodies there is a new type of cowl ventilator. Front fenders are wider than formerly, as are the running boards, which, together with a deeper radiator grille, hori-

zontal instead of vertical hood louvres, and a new radiator ornament, materially improve front-end appearance. At the rear there is an improved metal tire cover.

Interior body changes include new hardware, a more comfortable pitch to the seats, and improved springing in the seat cushions and seat backs.

### French Engine Design Trends

An investigation of engine characteristics of passenger cars made in connection with the Paris automobile shows of the past six years shows that the average compression ratio and the average rated engine speeds of *twenty leading makes* of car increased as follows:

Year	1928	1929	1930	1931	1932	1933
Compr. ratio . . . . .	4.76	5.01	5.15	5.31	5.48	5.72
R.p.m. of engine . . . . .	2780	2875	3100	3260	3340	3560

In comparing these figures with corresponding ones for American passenger cars it must not be overlooked that individual cylinder sizes are generally smaller in Europe.



# JUST AMONG OURSELVES

## Marketing Methods Due for Change?

**W**ONDER if marketing methods in the automobile business ever will change as radically as the appearance of many of the leading cars has changed for 1934? Talk of unique merchandising has been current time and time again, but the actual shift in practice at any one time has been within comparatively narrow range. Yet, until this year, the conversation about changed automobile exteriors was a good deal more radical than the actual designs.

Many sales executives seem to feel that better business will mean a return to past prosperity practices in most respects—a return to more exclusive dealerships for one thing. The swing toward handling of several makes by a single dealer, they feel, came merely because a dealer had to have more than one line in order to get volume and that as soon as volume increases again, exclusive dealerships will come back as in the past.

Other executives disagree with this viewpoint, believing that the multiple-car dealership has come to stay.

Whatever the outcome, we have a feeling that retail thinking may have changed permanently in one respect. Fewer dealers are going to make decisions as to taking on or sloughing off lines merely on the basis of what the next few months look like for the industry or for the individual line. More are going to view their every move as a part of a permanent busi-

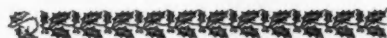
ness setup. They are going to act favorably on those things which look like profit possibilities in lean years as well as in fat ones. They are going to see more clearly than in the past the inter-relationship between the various elements in their businesses—and between the moves they make today and the ones they may have to make tomorrow.

Whatever changes this attitude might bring in the outward form of marketing practice, if it really came into being it would constitute as great a basic change as streamlining has in the appearance of the cars themselves.

\* \* \*

## Dealers Approve Reserve Ratios

**T**HE proposed code of fair competition for finance companies provides reserves to cover the dealer's loss hazard on all recourse and repurchase retail paper of 1½ per cent on new cars. It provides also a 3 per cent reserve, with a minimum and \$25 maximum, on used cars,



## A Christmas Toast

**M**AY the Yuletide bring you warmth from the hearts of friends, strength from the tasting of new spiritual experience and hope from perception of deeds still awaiting the touch of courage for their achievement.



plus \$5 extra on light delivery trucks.

Most dealers think the figures set up in the finance code are about right, however, as indicated by a widespread survey made by Commercial Credit Co. This company asked all its retail contacts to indicate whether, in their experience, these percentages proposed are too high, too low, or about right. Here's the way the score stood when most of the returns were in:

About right	76 per cent
Too low	15 " "
Too high	5 " "
Miscellaneous	4 " "

A strong indorsement for the proposed rates, we should say.

\* \* \*

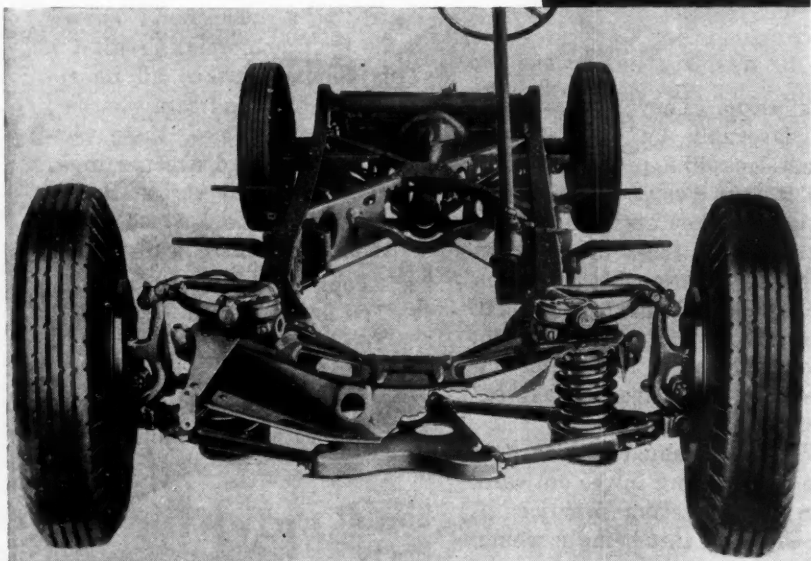
## Life at Forty

**P**ROBABLY you have read Pitkin's "Life Begins at Forty"; if not, you will want to do so at the first opportunity. Although not as carefully and as accurately written as might be expected from so eminent a journalist, this volume has scores of blunt truths packed into its multitude of common-sense paragraphs—and a real "kick" in nearly every one of its 175 pages.

Pitkin holds out little hope for those who, by the age of forty, don't yet know what they would like to do. But granted the presence of mature desires, he points the way to plentiful achievement through more effective utilization of the diminishing energy common after that age.

While the volume doubtless held special interest for us because about twenty months hence, we are going to cross that line where life begins, we're sure the book will interest you whether you are 17 or 70. We recommend it despite the fact that he says didactically that any man who plays tennis at all after the age of forty is a fool!—N.G.S.

# G. M.'s. "Knees" Get First Shot



The Buick's "knees"—a partially cutaway view of the new front suspension. Note the rounded edges on the tire treads to prevent squealing on turns

**I**NDEPENDENT springing of front wheels—"knee action wheels" is the General Motors name—is probably the most outstanding of the considerable number of mechanical changes made in the Buicks for 1934.

Such changes include transmissions quiet in all speeds, vacuum power units for the larger brakes, semi-automatic starting with automatic choke, two-speed idle, and automatic heat control; an octane selector in combination with vacuum spark control; "center-point" steering; tribeam headlighting; frames much more rigid; improved no-draft ventilation; air-wheel tires; increased bore on the 50 and 60 to compensate for higher car weight; increased compression ratio on the 90; reduced clutch pedal pressure on all cars. The series 80 has been dropped from the line. Automatic clutch control is now available on special order only.

On the 60 the wheelbase is 1 in. longer; on the 90 it is 2 in. shorter

(a compromise between the former 80 and 90 wheelbases).

Independent springing as applied to the front wheels of the new Buicks is of the transverse-

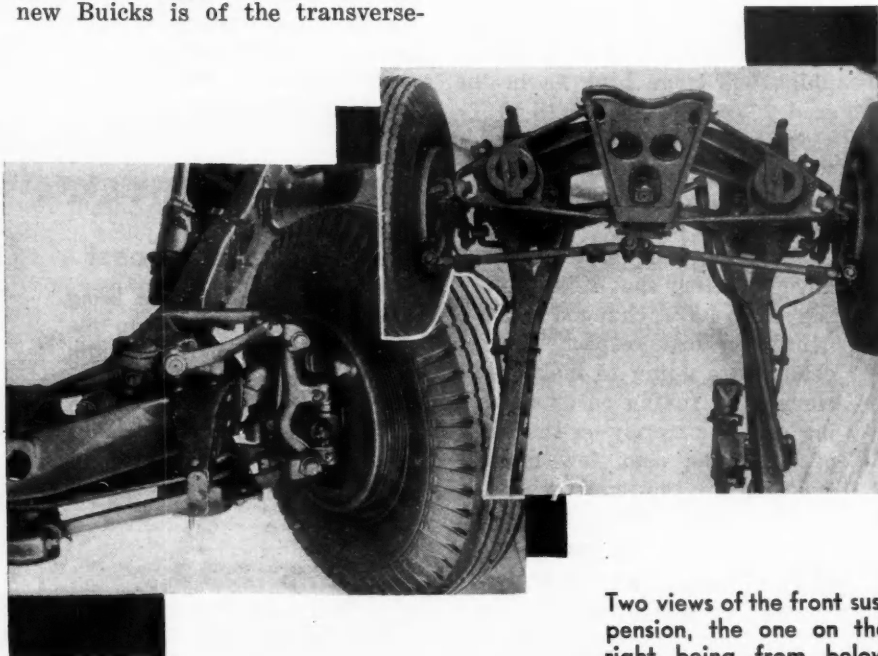
by Athel F. Denham

Field Editor, Automotive Industries

link parallelogram type. Links of wishbone shape extend from both the top and the bottom of the steering head to the frame. Between the lower link and the frame on each side is located a coil spring. These springs are called upon only to perform their normal function—that of springing the car. All guiding of wheels and the transmission of side thrust and brake torque are taken care of by the link mechanism.

The lengths of the upper and lower wishbone links are so proportioned that when wheels are deflected up or down the change in the track (distance between center points of tire contact with the road) is a minimum.

Separation of the functions of springing and guiding the front wheels—both of which are per-



Two views of the front suspension, the one on the right being from below

# Showing on New Buicks

formed by the springs in the conventional car—along with other factors permits a material lowering of front spring stiffness. The materially softer front springs give a remarkable ride, particularly in the rear seat. Pitching of the car is virtually eliminated. Independent springing in itself breaks up the chatter occasioned by driving over washboard roads.

The only disadvantage of softer front springs—increased tendency for the body of the car to roll out on curves—is compensated for by the provision of a torsional stabilizer at the rear end of the car. This consists of a simple spring-steel bar mounted in the frame just ahead of the rear cross-member. Crank arms on this bar connect by links to the rear axles. When one side of the car tends to rise faster than the other (as in rounding a curve), the arms set up a twisting action in this spring-steel bar. The resistance of the bar to twist therefore prevents undue side-sway.

In combination with the new front-end suspension, Buicks for 1934 are fitted with split tie rods and "center-point" steering. As will be noted from the illustrations,

Other improvements include all-helical gear transmissions, power brakes, tri-beam headlights, air-wheel tires, more horsepower, automatic choke, starting through throttle controls, more rigid frames and improved ventilation

steering movement is transferred to each front wheel separately from a "dead center" point with relation to vertical movement of the wheels. This design permits independent movement of the tie rods with independent displacement of the wheels. No matter what the vertical position of the wheels, correct geometry is automatically maintained.

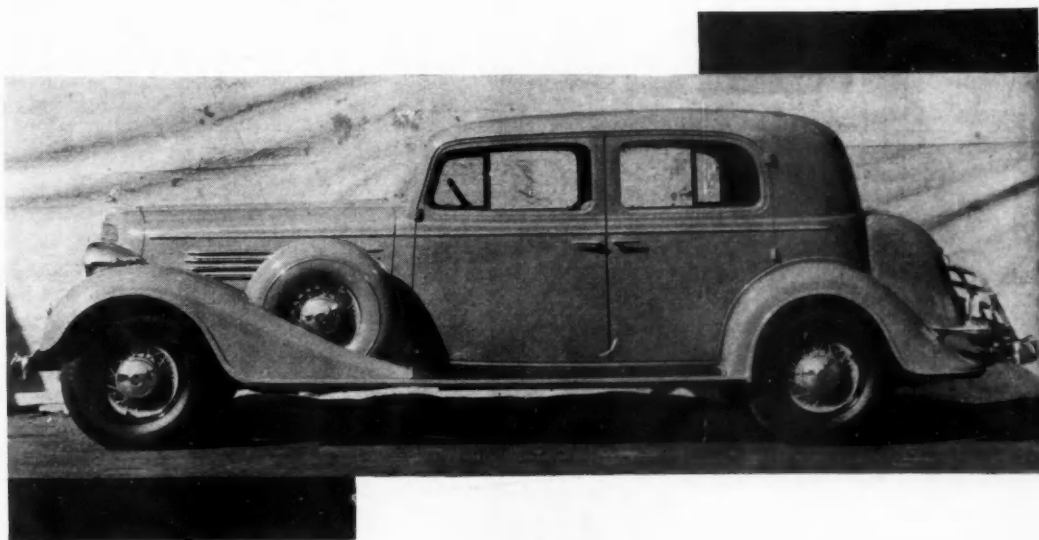
This feature contributes largely to the absence of wheel fight, tramp and shimmy in the 1934 Buicks. Incidentally, steering gear efficiency and ratios have been increased, while ball bearings minimize friction in the tie rods. These features further ease the steering around the straight-ahead position, while compensating for the inherently greater steering recov-

ery on curves with independent springing. This is due to the fact that when rounding a curve the wheels lean outward with the body.

Riding comfort in the new Buicks is further enhanced by a redistribution of weight in the cars. Powerplants have been moved ahead about 2 in., thereby putting a larger proportion of the weight on the front axle. This in turn has permitted an increase in body dimensions, and it is claimed that the bodies have from 2 to 4 in. more interior room than those of last year.

Front and rear shock absorbers differ in design. Both are the well-known Delco Products double-acting, piston-type, hydraulic units, but those at the front are provided

The club sedan on the 60 chassis. The radiator is well ahead of the front axle, the hood is longer and featured by a new louvre design, and the fender and headlamp design has been improved







Major Changes in Buick Specifications for 1934

Model	50	60	90
Wheelbase, in. ....	119	128	136
Shipping weight, 5-p. sedan .....	3870	4310	4685
Tire size .....	7.00/16	7.50/16	7.50/16
Rim width .....	4.50	5.00	5.00
Rear-axle ratio ..	4.89	4.7	4.36
Max. hp. ....	88-3200	100-3200	116-3200
Rated hp. ....	28.2	30.6	35.1
Bore .....	2-31/32	3-3/32	3-5/16
Stroke (un- changed) .....	4-1/4	4-5/8	5 in.
Displacement .....	235.3	278.1	344.8
Compression ratio ..	5.25	5.25	4.95
Automatic choke ..	yes	yes	yes
Starter engage- ment .....	through accelerator pedal mechan- ical shift solenoid		
Clutch pedal pres- sure, lb. ....	30	31	32
Automatic clutch ..	extra	extra	extra
Transmission .....	all silent helical gears		
Front suspension ..	independent link parallelogram		
King-bolt diameter	3/4	3/4	1 in.
Link-hinge bear- ings .....	threaded bolts and bushings		
Front-spring type	coil	coil	coil
Spring rate .....	125 lb.	140 lb.	150 lb.
Material .....	silico-manganese steel		
Approx. free length	14-3/4	14-3/4	14-3/4
Inside diameter ..	4-3/64	4-3/64	4-3/64
Wire diameter ....	43/64	45/64	23/32 in.
No. active coils ..	7-3/4	7-3/4	7-1/2
Rubber bumpers ..	on frame	on frame	on frame
Rear springs rates	135	145	175 (7-p.)
Power brake .....	yes	yes	yes
Drum material ...	cast iron	cast iron	cast iron
Shoes per brake	2	2	2
length of shoes ..	12.56	14.66	14.66
Width .....	1-3/4	1-3/4	2-1/4
Lining per car ...	100-1/2	115-3/4	115-3/4
Percentage brak- ing on rear .....	50	50	50
Steering-gear type	worm	and double	roller
Overall ratio .....	20.3	20	23.5
column ratio ....	19	20	22

Model	50	60	90
No. of tie rods ...	2	2	2
tie rod bearings.	ball	ball	ball
Min. turning circle			
diameter .....	40 ft.	42-3/4 ft.	48-1/2 ft.
Frame max. side			
rail depth .....	6-1/2	7	7-3/4
stock thickness ..	1/4	9/64	5/32
flange width, max. ....	2-1/4	2-1/4	2-3/4
frame length ...	171	180	188
Prop. shaft type ..	tubular	tubular	tubular
diameter .....	2-1/16	2-1/16	2-1/4
Shock absorbers ..	Delco	Delco	Delco
Type front .....	Inertia	Inertia	Inertia
rear .....	double acting hydraulic		
Wheels type .....	wire and dem.	steel artillery	
Rim type .....	drop center	integral with wheel	
Tire inflation hot..	26	24	28
cold .....	23	21	25
rev. per mile ...	687	679	676
Toe in, degrees ..	.21-.61	.21-.61	.21-.61
Caster, degrees ...	1 1/4-2 1/4	1-1 1/4	1-1 1/4
Camber, degrees ..	1/2-1 1/4	1/2-1 1/4	1/2-1 1/4

Adjustment for toe-in is by lengthening or shortening tie rods. Adjustment for caster is by means of the screw type bearing on the upper end of the knuckle support arm. Camber adjustment when necessary is by shimmiing either the top or bottom link wishbones at the knuckle support arm. Camber and caster specifications are for normal static car position, curb weight, without passengers.

	Shipping weights		
	50	60	90
2-p. bus. coupe ...	3685	none	none
4-p. sport coupe ..	3750	4170	....
4-p. conv. coupe ...	3690	4135	....
5-p. 4-d. sedan ...	3870	4310	4685
5-p. vict. coupe ...	3770	4200	4610
5-p. convert. phaet.	none	4360	....
5-p. club sedan ....	none	....	4685
7-p. sedan .....	none	none	4795
6-p. sed. limous. ..	none	none	4870

with an inertia control valve, as used on some General Motors cars last year. At the rear the inertia control is not provided. The front shock absorbers have an arm on each side. The units are mounted on top of the frame in such a manner that the shock-absorber arms themselves form the upper link wishbone to the top of the steering head.

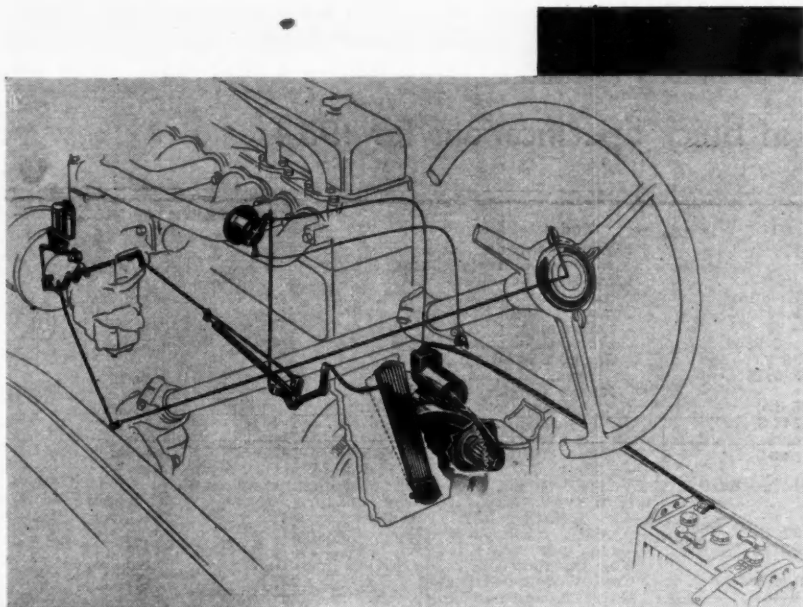
For the elimination of small vibrations, and to cushion side shocks on the relatively rigid wheel-guiding linkage, oversized (so-called super-balloon) tires are fitted. These tires are provided with a rib tread designed for greater quietness, and the edges of the tread are rounded off to eliminate squealing and excessive tread-edge wear on curves, due to the lean of the wheels under such conditions. Inflation pressures recommended range from 21 to 25 lb. for the different chassis. Maintenance of correct tire pressure is more important than with conventional tires.

The use of coil springs at the front end probably is due mainly to the necessity for eliminating friction in the suspension system when soft springs are used, to obtain the maximum permissible improvements in riding qualities. Large rubber bumpers are installed

inside the coil springs to cushion shocks gradually and prevent striking through with the soft springs used. They provide a graduated stop for compression of the springs. Rubber bumpers are also attached to the frame side-rail to limit the rebound. The upper wishbone link

The cowl ventilator opens to the rear, catching air currents flowing down the windshield





1934 Buick engines may be started either with the foot or hand throttle. This phantom view shows the layout of the connections

to the steering head strikes against this rubber bumper. "Frictionless" threaded bolts and bushings, similar to shackle bolts formerly used, are provided at the hinge points in the front linkage mechanism. They are provided with pressure-gun lubrication fittings.

Vacuum power brakes are used on all 1934 Buicks. The mechanism incorporates a control valve which prevents too rapid application of the brakes. It is so designed that for pedal pressures up to 50 lb. it doubles the effective force of brake application, so that with a pressure of 50 lb. on the pedal the effect is the same as with a force of 100 lb. without the power unit. Amplifying action is limited to 50 lb., however, and any pressure on the pedal in excess of 50 lb. adds only that much to the effective force of brake application.

The effective frictional area of the brakes has been increased by lengthening the "reverse" shoe, making it the same length as the "forward" shoe. It is understood that these units are now interchangeable. Buick also has reverted to cast-iron drums on the 1934 series. These drums are provided with a large number of circumferential cooling fins, made necessary by the use of smaller wheels and reduced cooling space for the drums. Adoption of the vacuum power system and the increase in brake size has made possible a decrease in pedal ratio, reducing the frequency of adjustments on cars in service. The

handbrake is hooked up to all four wheels in such a manner that the vacuum power unit is not brought into operation when it is applied.

The new suspension has brought with it a major change in frame design, particularly at the front end. Independent springing requires a much more rigid frame than conventional suspension. The X-member legs in the frame form a box section with the side rail adjacent to the powerplant, and at

the rear kick-up a box section for reinforcement of the shock-absorber mounting. The front cross-member can be studied better from the illustration than it can be described.

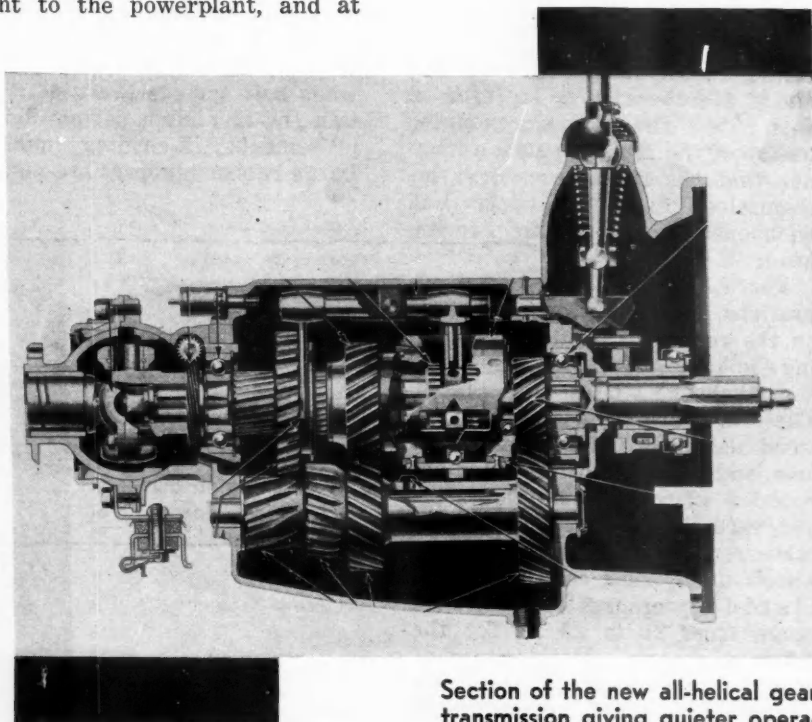
Propeller shafts in the new Buicks are tubular instead of solid, reducing the tendency to whip. On the 50 and 60 the rear axle ratio has been increased slightly to compensate for the increased car weight.

Power increases of roughly 3 per cent have been obtained in all three engines. On the 50 and 60 series the gain has been achieved by increasing the bore  $1/32$  in. On the 90 the compression ratio was raised from 4.8 to 4.95.

Other engine changes are confined mainly to the accessories. The carburetor is an improved up-draft Marvel with thermostatically controlled heat valve. Gasoline tanks are reinforced with ribs to reduce deformation.

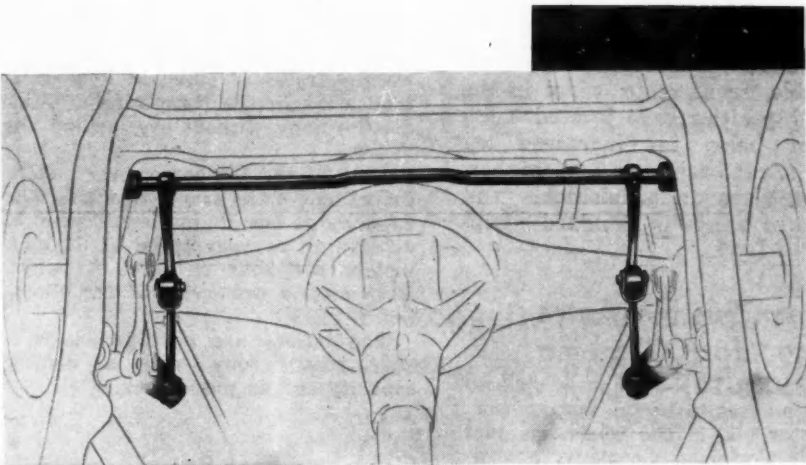
Engine starting is accomplished by means of either the accelerator pedal or the hand throttle. When the ignition switch is on, this movement of the pedal closes a switch, energizing a solenoid on top of the starter motor. This meshes the starter gears and then starts the starter motor. The starter will not function with the ignition switch off.

As soon as the engine starts, a vacuum-controlled switch interrupts the starter control circuit, opening the points of this switch,



Section of the new all-helical gear transmission giving quieter operation in all speeds





To reduce sidesway on curves, this torsion bar is located at the rear of Buick chassis

which are then held open by a mechanical latch. This latch cannot be tripped except by returning the accelerator pedal or throttle control to the normal position.

A further interruption of the starter circuit is at the generator relay. When the generator is charging, the circuit is automatically opened and cannot be closed by returning the accelerator to "starting position." The ability to start the engine with the hand-throttle should be of advantage on a steep hill when both feet are being used to control the brake and clutch pedal.

A further feature of the 1934 starting system is an automatic choke, which regulates the choke position in accordance with the temperature of the exhaust manifold. A supplementary control is by intake vacuum. With the engine started and firing evenly, intake vacuum opens the choke valve more than would be permitted by the thermostatic control alone. This insures against overchoking with open throttle. It is evident that if the throttle is opened suddenly, before the engine has reached proper operating temperature, the drop in intake vacuum will permit the choke control to close the choke valve somewhat, an insurance against back-firing or spitting. A fast-idle control is connected to the choke control for cold weather warm-up.

The electrical system this year also incorporates a vacuum spark control which retards or advances the spark according to the load under which the engine is operated. This is in addition to the automatic

spark advance which advances the spark in proportion to engine speed. In effect it modifies the spark advance according to throttle position.

In addition, a manual adjustment of initial distributor head position is provided, with the control on the dash. Referred to as an octane selector it is provided mainly to adjust the engine quickly for fuels of different anti-knock values, and thus maintain engine operation at maximum efficiency. A minor change in the electrical system is the provision of lead-antimony terminals on the battery, which gives better protection against corrosion.

All "one-stop" servicing requires lifting of one side of the hood only the oil-level gage, the oil filler, and the water filler all being located on the same side.

Vacuum clutch control being no longer standard equipment (though it can be had on order at extra cost), the pedal pressure required to operate the clutches has been reduced materially.

Transmissions now have helical gears for quiet operation in all speeds. The addition of such gears for low and reverse involved the provision of helical splines on the mainshaft for the shifting of the mainshaft gear engaging these speeds. Synchromesh is retained for second and high speeds.

The external appearance of the bodies has been modified rather than radically changed. Radiators have an increased slope and have a colored strip running down the center of the Vee-shaped grille. Fenders extend down farther in

front. Fender sills are shallower. Headlamp bodies are longer for more streamlined effect. Bumpers are of the drop-center type. Dual horns below the headlamps are furnished.

From the side the Buicks are noted for a longer and more nearly unbroken belt-line. Chromium running-board beading extends forward to the fender skirts. Hood louvres are rather few in number, horizontally arranged, and chromium trimmed.

Windshields are fixed in place, as formerly. There are two vacuum-type wipers, operated by a vacuum pump integral with the fuel pump.

At the rear there are drop center bumpers of a new design.

Wheels are of a new all-steel, artillery-spoke type, and smaller in diameter, to take the new section tires. For side mounting of the spare wheels, a bracket independent of the body is secured to the frame side rail. This bracket also supports the fender well. Metal tire covers are designed to permit inflating spares without removing the covers.

All models are equipped with multi-beam headlighting. The headlamp beams cross, so that the left lamp illuminates the right side of the road. A foot control switch operates the right-hand lamp only, depressing the beam on that side by lighting the upper filament. The beam from the left lamp is not depressed for passing. The main headlamp switch on the steering wheel has three "on" positions, one for the parking lights, one for "city beam" (with both left and right headlamp beams depressed), and one for "country driving" (with the upper beam of the left-hand lamp together with either the upper or the lower beam of the right-hand lamp, depending on the position of the foot selector switch).

The ventilating system of the new Buicks has been further refined. Ventilating windows in front doors are fitted with rain or snow deflectors at the top. Hinges of the ventilator wings are now concealed in the frame assembly. Front doors of coupes, convertibles, and phaetons now also have ventilators built in. Cowl ventilators have been reversed and now open toward the rear, catching the air deflected from the windshield.

In some models, front cross-seats have the appearance of being divided to form individual seats. These—the four door sedans on

the 50 and 60 series, and the club sedans on the 60 and 90—have smoking cases built into the backs of the front seats. Other models carry two smoking sets in the rear compartment, at the sides. A combination ash receiver and cigar lighter is located at the center of the instrument panel in the front compartment.

Instruments on the new panel have translucent dials. A clock can be installed by removing the Buick monogram on the door of the larger glove box at the right of the panel. Under the cowl at the right side a pocket is built into the side panel trimming on all models.

All sedan rear doors have built-in pockets. Seat adjusting mechanisms have been improved to prevent rattle. Dust shields are

provided on right-hand, front-door locks.

With the increased body room available, front seats, when in the normal position, are located 1 in. further back, for increased leg room. Seat backs are 1 in. higher. Safety glass in windshields and ventilator wings is standard equipment.

## German Bus Has Extra Engine for Climbing

WASHINGTON—What is claimed by the makers to be the most powerful motor bus in the world has just been developed in Germany, according to a report from the American consulate general, Berlin, made public by the Commerce Department.

The vehicle has a 320-horsepower twin-six cylinder engine. This power,

it is pointed out, is not intended primarily to develop maximum rates of speed, but mainly to develop high average rates of speed in long overland trips in the mountains of Middle Germany without overloading the motor.

Each of the 160-horsepower motors drives one of the two rear axles. The capacity of one engine is sufficient to achieve an average speed of 80 kilometers per hour on level stretches. Both motors are operated for climbing.

The busses are equipped with a very roomy body, with a seating capacity for 43 passengers.

## Fishers on Bank Board

DETROIT—Fred J. and Charles T. Fisher has been elected to the board of directors of the National Bank of Detroit.

# Baker Front Suspension System Requires Few Changes in Conventional Car Design



Fig. 1—Baker "articulated axle"

**B**AKER AXLE COMPANY (formerly Baker Wheel and Rim Company) announces that at least two major car producers will offer its "independent suspension system" on their 1934 models.

The system, already described briefly in these columns under the designation of "articulated axle" (see *Automotive Industries*, Nov. 11th, page 574), is extremely simple and can be adapted to existing cars without material changes in any other parts.

As shown in Fig. 1, conventional frames and longitudinal semi-elliptic springs are retained, and for the rigid center section of the front axle I beam is substituted a pair of parallel links, one above the other, with forks at their ends. The steering assembly can be retained unchanged, experience having indicated that the variation in toe-in which occurs with relative wheel displacement is of benefit, particularly for steering on curves.

Articulation of the axle beam is said to break up front-axle harmonics and to assist materially in the elimination of shimmy and tramp. Virtually independent action of the wheels, moreover, materially improves riding qualities on rough roads.

Fig. 2 shows one front wheel in a raised position. The articulation, by allowing the springs to twist, tends to keep the frame and body in a horizontal position. Moreover, when only one of the wheels passes over an obstruction, the shock is divided between both springs and the twisting action on the chassis frame almost eliminated.

In rounding curves, the centrifugal force causes the wheels to lean outward, raises the outer spring pad, and compresses the outer spring, thereby tending to maintain the body on an even keel. Increased stability on curves at

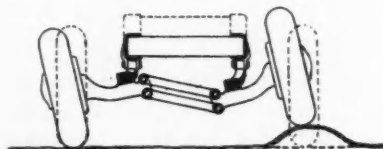


Fig. 2—View showing one front wheel in raised position. (Rear wheels dotted)

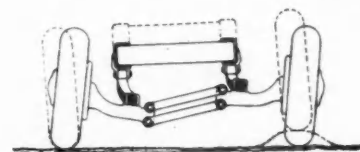


Fig. 3—View showing one rear wheel dotted) in raised position

high speeds (for the same spring rate) is therefore claimed, as compared with conventional axles.

Fig. 3 shows another compensating feature of the articulated axle. In the case of vertical displacement of one rear wheel, frame twist is reduced by translating frame inclination into tilt of the front wheels.

The position of the wheels and articulating links in these figures is somewhat exaggerated for purposes of illustration. Wheel inclination, of course, is resisted by the torsional stiffness of the semi-elliptic springs.

The cost of this axle should be relatively low. Bearings at the articulation points probably should be of the anti-friction type, for freedom of motion of the assembly, and should be sealed. Conventional steering knuckles, wheel spindles, etc., can be retained, although it may be advisable to modify the caster, camber, and toe-in specifications in some cases.

# "Fly-by-Night" Truck Operators Are Petty Chiselers Compared to Railroads

Ted V. Rodgers, president of American Trucking Associations, says in attack on recent freight rate cuts to "meet" highway competition

THE railroads are the most notorious chiselers in the field of transportation today. They have accused trucks of "unfair competition"; they have called truck operators "rate-cutters." Yet, the railroads themselves have launched a program of wholesale undercutting which threatens to shatter all existing rate structures. A year ago, they instituted reduced rates "to meet truck competition"; now they are instituting rates, which, if allowed to continue, will destroy truck competition. It is doubtful whether trucks will be able to go rolling on under the pressure of such unfair competition.

Let us look at the record of this rate-cutting: Here in Detroit, the hub of the automobile industry, automobile transporters are facing complete destruction of their business in proposed tariffs of the railroads cutting the minimum rates on shipment of automobiles by 25 to 40 per cent under existing truck rates. Yet the railroads last year carried 2,543,833 carloads of auto-

Editor's Note — Excerpt from speech before the Detroit Traffic Club.

motive freight representing revenue of about \$325,000,000. And with 1933 carloadings considerably in advance of those of last year, the corresponding figures this year will show a big increase.

In California, the railroads have filed thousands of rates, each tariff reading, "to meet truck competition." In nearly every case, however, these rates are framed to meet the going rate of the so-called "wild-cat" trucker, who, next to the railroads, is the legitimate trucker's worst enemy. It is impossible for the certificated carriers to compete with the abnormally low rates of the railroads and the "wild-cat" truckers. While these new railroad rates are not compensatory, they are defended on the ground that they do yield something above out-of-pocket cost and are predicated upon the added traffic theory. A tariff proposing a 25 per cent reduction in the rail rates on gasoline recently was

filed. This tariff would take the rate considerably below present truck rates and make this business unprofitable for trucks.

There would be no public objection to these cheap rail rates if the railroads could demonstrate to the Interstate Commerce Commission that these rates are compensatory. But by their own admission they anticipate that much of this undercutting will result in losses to them. Such a result would further disrupt rate structures and bring about a transportation bedlam.

The Railway Express Agency, on some of their routes, has reduced express rates to a figure below l.c.l. railroad rates and less than competing truck rates. The idea, of course, is not merely to meet truck rates, but to undercut truck rates so as to divert the tonnage. It appears that the only method of gaining tonnage known to the railroads is to *chisel* against truck rates.

In Florida, Railway Express Agency issued a local commodity tariff last summer applying on (Turn to page 775, please)

IMPARTIAL consideration of the facts which Mr. Rodgers marshals in this attack inclines one to the view that while the railroads are wilfully indulging in cut-throat practices to exterminate truck competition, the various departments of the Federal Government are, wittingly or unwittingly, abetting the crime.

On the one hand we have NRA insisting that the truck industry operate under a code whose avowed intent would be to increase employment and wages, consequently increase costs and, ergo, compel rate increases.

On the other hand we have the Interstate Commerce Commission sanctioning non-compensatory railroad tariffs below trucking rates, chiseling which obviously nullifies the salutary intent of the NIRA.

It would seem that coordination of effort by the various Federal agencies is as much of a necessity as transportation coordination. Certainly if one arm of the Government is to be raised against that of another, industry must view code agreements as shackles. An instance of this effect is seen in the present plight of the bus industry which, bound by code to charge compensatory tariffs, is helpless in the face of widespread railroad rate-cutting practices.



# Merit Clause Retained as Automobile Code Is Extended to September, 1934

July-September Comparisons Released by Johnson Indicate 25 Per Cent Increase in Hourly Wage Rates Under Code—Employment and Payrolls Gain Despite Production Decline

WASHINGTON—The automobile code has been extended to Sept. 4, 1934. Other than to insert the new expiration date, the code was renewed without change which means, of course, that the "merit" clause was retained. The President acted following the receipt of a request for extension from the National Automobile Chamber of Commerce which was forwarded to the White House with General Johnson's approval.

The President's action in renewing the code with the "merit" clause retained, did not come entirely as a surprise as late last week General Johnson said that, in view of the letter of interpretation written by the President last October, the continuance of the clause was a matter of indifference to him. Prior to this revelation of NRA attitude, it was quite generally anticipated that the renewal of the automobile code would precipitate another "merit" clause controversy, with NRA against its retention. Some months ago General Johnson stated that it got by him in "an unguarded moment" and that it would not be permitted in any other code. Furthermore labor had given repeated indications that it would oppose its continuance vigorously. These various factors seemed to point to a renewal of last summer's argument over the disputed language. But they apparently evaporated after General Johnson made it clear that he would not oppose the retention of the clause and as a consequence the code went through extension almost as a matter of routine.

In forwarding the Chamber's request for extension, General Johnson said that Chamber members had increased employment from 125,000 in July to 150,700 in September and that payrolls in the latter month were \$14,700,000 as compared with \$12,700,000 in the former. The increases were not due to larger production but to shorter hours and higher wages as man-hours declined from 21,300,000 in July to 19,600,000 in September due to lower production. The comparisons do not include Ford as data covering his July operations are not available.

A summary of the foregoing data and some facts derived from them, follows:

	September	July	Per Cent Change
N.A.A.C. United States Production (Est.)	144,000	173,000	-17
Employment	150,700	125,000	+20
Employment per vehicle	1.045	0.732	+43
Payrolls	\$14,700,000	\$12,700,000	+16
Pay per vehicle	\$102	\$73	+40
Man-Hours	19,600,000	21,300,000	-8
Pay per worker	\$ .97.50	\$102	-5
Pay per hour	\$ .75	\$ .60	+25
Hours per man	130	170	-23
Hours per vehicle	136	123	+10

It will be noted that the employment per vehicle was 43 per cent higher in September than in July, while the labor cost per vehicle increased 40 per cent. Some of these increases presumably were due to lower production in the latter month as the 10 per cent increase in man-hours per vehicle suggests. Despite a reduction in monthly hours per man from 170 to 130, monthly pay per worker decreased only from \$102 to \$97.50 due, of course, to the fact that in September the average hourly rate was 25 per cent higher than in July.

## Jobber Code Approved

WASHINGTON—The code of fair competition of the automotive wholesale trade has been approved by President Roosevelt. Copy of the approved code is not available but it is understood that no major changes were made in it since the public hearing.

Section VI providing for resale price maintenance does not become effective for 90 days and then only if investigation which the code directs shall be made, shows that unfair and discriminatory practices exist.

## All G.M. Divisions Drop Junking Plan

DETROIT—All divisions of General Motors have eliminated the junking plan from their 1934 programs, due to the fact that the control of used car allowances provided under the dealer code is regarded as removing the need for it.

In addition, Chevrolet has made changes in accessory discounts and in the method of handling deliveries of new cars to dealers. The most important effect of these changes will be to reduce materially the spread between list and delivered prices, and thus to offset to a considerable extent the expected increase in list prices.

Hereafter it is understood Chevrolet will deliver all new cars to the dealer conditioned ready for delivery to the customer, instead of delivering

the cars to the dealers at the assembly plant and leaving the conditioning to him. The factory will make a charge for this service which will be substantially less than the total of freight handling, etc., which the dealer has been including in the delivered price. In addition to reducing the amount the customer pays, the new plan insures that all cars delivered are conditioned to a standard.

Front and rear bumpers, tire, tube and tire lock will carry the same discount as the new car, thus reducing the cost of these items to the buyer. The effect of these changes will be to reduce the spread between the list and delivered prices by a substantial figure, the decrease amounting in some areas at least to more than \$30. The reduction in dealer gross profit per unit, it is understood, will be in the neighborhood of \$6.

The elimination of the junking plan, which Chevrolet pioneered, will provide a partial offset to increased labor and material costs in 1934, and thus reduce the amount of the list price increase which these higher costs justify. As is generally known, the plan provided that the factory credit

(Turn to page 771, please)

# NEW

## Test Code Control First, Truckers Tell Eastman

WASHINGTON—No regulation of motor truck transportation should be attempted by the Federal Government until the Code of Fair Competition for the trucking industry has been given a fair trial. That view was expressed in a statement filed with Joseph B. Eastman, Federal Coordinator of Transportation, by the American Trucking Associations, Inc., in reply to a questionnaire on regulation of transportation. A reasonable period of time should be allowed to develop sufficient experience and useful data on which to base intelligent and reasonable regulation to cover such transportation, the association's reply states.

# WS

## Domestic Car Sales in December Expected to Exceed Last Year Despite Low Stocks

Factories Now Look for Passenger Car Sales in the United States in 1934 of Over 2,000,000, Representing a Gain of 30 Per Cent Over 1933—Plymouth Order Reach New Daily High

by Athel F. Denham

Field Editor, Automotive Industries

### Court May Give Permission to Build 5300 Willys 77's

TOLEDO—A special hearing in the Federal Court has been granted to the Willy-Overland receivers on an application for permission to continue manufacturing to complete orders for 5300 Willys 77's. While no decision was handed down up to the time of our going to press, it seems certain the court will issue an authorization in which case operations will be continued in all probability through February and part of March.

Walter E. Miner, comptroller, while on the stand testifying as to cost figures and changes in specifications was extensively cross-examined by counsel for bondholders.

### Auburn Spending Million for New Factory Equipment

AUBURN, IND.—The Auburn Automobile Company is spending more than \$1,000,000 in new tools and dies in preparation for 1934 production schedules, W. H. Beal, president of the company, announced this week.

DETROIT—Reports of domestic sales for the first half of December are so far too scattered and varying to permit of accurately gaging possible sales totals for the month. The major variable is the availability of new car stocks among different producers. It is quite likely, however, in spite of all the conditions faced by the industry, that December retail sales will exceed last year's figures of roughly 46,000 units. Total sales of 50,000 would represent a decline of approximately 40 per cent from November totals.

There is a tendency of late toward a much more favorable outlook for next year than was current even 30 days ago. The average estimate on new car domestic deliveries for next year is now slightly in excess of the two million mark which would represent an increase of roughly 30 per cent over 1933.

Dealers orders for new Plymouth cars totaling \$6,200,000 have been received according to B. E. Hutchinson, Plymouth board chairman. This includes orders in excess of \$4,500,000 received Tuesday which is said to have been the biggest day in Plymouth history.

Sales of Studebaker automobiles to dealers during November, 1933, totaled 8105 cars and were 13 per cent greater than the combined business of November, 1929, 1930, 1931 and 1932, according to George D. Keller, sales

manager. November sales were greater by 18.09 per cent than any similar period since 1924.

Sales figures on Oldsmobile cars for the first eleven months of this year showed an increase of 47.4 per cent over those of the corresponding period in 1932.

### New Pontiacs Have Crank-Arm "Knees"

Softer Front Suspension Results in Big Decrease in Vibration Frequency

DETROIT—Pontiac cars for 1934 will have independent suspension at the front end, but the system will not be the same as that of other General Motors cars of which details have been disclosed so far. As shown by the photograph reproduced herewith, the suspension is of the crank-arm type. The steering head with the king pin is carried at the end of a channel-section member extending across the chassis frame and bolted



The Pontiac's "Knee"

to the front cross member thereof from underneath. Springs and their mountings therefore are located beyond the steering pivots and swing with the front wheels in steering.

The crank arm to which the wheel spindle is flange-bolted is mounted in the housing on needle bearings. Load due to the weight of the car is transmitted to it through a coil spring. In

(Turn to page 774)

## November Production Totals 66,195

WASHINGTON, D. C.—November production of motor vehicles in the United States and Canada amounted to 66,195 as against 142,157 in October and 61,761 in November of 1932. This gives an increase over last year of 7 per cent, but at the same time shows a decrease from October of this year of about 53 per cent.

Production for the first eleven months of 1933 was about 46 per cent over that for the same period of 1932,

and amounted to 1,937,808 as compared with 1,322,002 last year.

Of the motor vehicles produced during November in the United States and Canada 45,932 were passenger cars while 20,263 were trucks. Of these numbers 44,429 cars were produced in the United States while 1503 were produced in Canada. The U. S. Production of trucks amounted to 19,475 and 788 came from Canada.

A comparative summary follows:

	Total	Cars	Trucks
11 Months, 1933 .....	1,937,808	1,604,487	333,321
11 Months, 1932 .....	1,322,002	1,098,499	223,503
November, 1933 .....	66,195	45,932	20,263
October, 1933 .....	142,157	110,796	31,361
November, 1932 .....	61,761	49,201	12,560

# Business in Brief

Written by the Guaranty Trust Co., New York, exclusively for Automotive Industries

General business last week continued to improve, with a betterment in both wholesale and retail trade. Reports indicate that holiday trade was not only better than a year ago, but in some sections the level of buying was the best since 1930. A good showing was made by the heavy industries, with a sharp increase in steel mill activity. Attending this improvement, there has been an increase in employment; and general sentiment appears to be much better.

## Chain Sales Over 1932

Store chain sales in the New York Federal Reserve District during November were 6 per cent above those in the corresponding period last year, showing a much more favorable year-to-year comparison than in October.

## Freight Loadings Increase

Railway freight loadings during the week ended December 9 totaled 537,503 cars, which marks an increase of 42,078 cars above those during the preceding week, an increase of 16,896 cars above those a year ago, but a decrease of 76,118 cars below those two years ago.

## Dept. Store Sales Drop

According to the Federal Reserve Board, the preliminary adjusted index of department store sales for the month ended Nov. 15 stood at 65, as against 70 for both October and September.

## Michigan Employment Expands in November

DETROIT—Employment in the automobile industry in Michigan during November totaled 136,720 compared with 126,190 in November, 1932, and 154,164 in October, the figures being based on reports of 97 companies and compiled by the State Department of Labor & Industry.

Aggregate weekly payrolls totaled \$2,923,010 in November, \$2,615,407 in

## Farm Products Show Small Gain

The index of prices received by farmers for their products showed a gain of one point during the month ended Nov. 15. However, the index of prices paid by farmers for the commodities they buy also increased one point during that period.

The general average of retail food prices during the two weeks ended Nov. 21 showed an increase of 0.1 per cent, according to the Bureau of Labor Statistics.

## Power Production Largest Since Early October

Production of electricity by the electric light and power industry in the United States during the week ended Dec. 9 was 6.6 per cent above that a year ago and was at the highest level since the week ended Oct. 7.

## Wholesale Prices Firm

Professor Fisher's index of wholesale commodity prices during the week ended Dec. 16 stood at 72.0, as against 71.7 the week before and 71.4 two weeks before.

## Federal Reserve Statement

The consolidated statement of the Federal Reserve banks for the week ended Dec. 13 showed increases of \$2,000,000 in holdings of discounted bills and of \$55,000,000 in holdings of bills bought in the open market. Holdings of government securities remained practically unchanged.

November last year and \$3,200,926 in October.

Average weekly earnings per capita were \$21.38 in November, \$20.76 in October and \$20.72 in November, 1932.

## Stewart-Warner Changes

CHICAGO—Joseph E. Otis, Jr., executive vice-president of the Stewart-Warner Corporation has been elected a director to fill the vacancy created

by the resignation of C. B. Smith, former president. Mr. Otis has also been elected a member of the executive committee of the corporation.

V. R. Bucklin, vice-president, treasurer and member of the executive committee and L. H. LaChance, former chairman and later president of the Stewart Die Casting Corporation, have resigned all of their official positions except their posts as directors.

## Lincoln Revises Prices Up and Down for 1934

DETROIT—Lincoln Motor Company has announced decreases of \$100 to \$500 in prices of the new V-12-145 series and increases of \$100 to \$200 in the new V-12-136 series, prices of the new Lincolns ranging from \$3200 to \$6800 with full equipment at Detroit. Individual model prices follow:

### V12-136 Series

2-p. coupe .....	\$3200
2-p. coupe with rumble seat ...	3250
2-p. conv. roadster with rumble seat .....	3400
5-p sedan .....	3400
5-p coupe .....	3400
Town sedan with built-in trunk and de luxe wheel equipment.	3450
7-p sedan .....	3500
7-p limousine .....	3550
Convertible sedan-phaeton ....	3900
Chassis .....	2500

### V12-145 Series

7-p. Touring .....	\$4200
LeBaron conv. roadster .....	4400
7-p. Sedan .....	4500
7-p. Limousine .....	4700
Judkins 2-window berline .....	5400
Judkins 3-window berline .....	5400
Brunn conv. coupe .....	5600
Willoughby limousine .....	5600
Dietrich conv. sedan .....	5600
Judkins sedan-limousine .....	5700
Brunn brougham .....	6800
Brunn cabriolet .....	6800
Chassis .....	3100

## Graham Sees Auto Exports Increasing 100% in 1934

DETROIT—Urging a reduction of tariffs in certain commodities as a means of bettering American foreign trade, Robert C. Graham, chairman of the export committee of the National Automobile Chamber of Commerce and vice-president of the Graham-Paige Motors Corporation, in an address here on Dec. 16 said America must adopt a "Live and Let Live" policy in its international dealings.

Reporting on a survey of export conditions, completed in a European trip from which he recently returned, Mr. Graham said it is his "firm belief" that if economic conditions continue to improve as they have, America will double her automotive export business in 1934 over that of 1933.



## No Dictation from NRA Code Authority Members

### General Johnson Outlines Duties of Representatives

WASHINGTON—NRA representatives on code authorities must carefully avoid "the fact or appearance of dictation or coercion" and will function as "co-workers in an undertaking of public interest, concerned only in the faithful administration of the Codes," General Johnson said in the announcement of NRA representatives on 90 code authorities.

Specifically General Johnson summarized their duties as follows:

1. Refer with recommendation to the Administrator through the division administrator those matters mentioned in the code as being subject to review and/or the approval of the Administrator.
2. Recommend to the division administrator such other matters as in his judgment are important to the welfare of the industry, or to the public interest, or to the consumers or employees affected by the provisions of the code.
3. Through the code authority secure complete assent to and compliance with all provisions of the code by each unit of the industry.
4. Assist the code authority in connection with the preparation of recommendations for necessary interpretations, modifications, and additions to the code. Consult with the division administrator in reference thereto.
5. Warn and guard against threatened deviations from the code or non-observance of its terms or action contrary to the principle of N. I. R. A.
6. Constantly scrutinize the operation of the code and see that it does not permit or promote monopolies nor tend to eliminate or oppress small enterprises.
7. Advise with the code authority in seeing that its affairs are handled in a cooperative and fair manner with respect to all units under the code, making sure that the provisions of the code are strictly adhered to with an equitable and fair settlement of all matters covered by the code pertaining to the interests of the general public, consumers or employees.
8. Assure himself and the division administrator that the industrial members of the code authority are truly representative of the entire industry and elected by a method fair and equitable to all concerned.

As reported in last week's *Automotive Industries*, K. J. Ammerman has been appointed to the automobile manufacturing code authority, J. Reed Lane to the motor fire apparatus authority, and E. E. Hughes to the motor bus authority.

## New Company to Make Car and Garford Truck

LIMA, OHIO—Garford trucks are to be produced again in the old Relay plant by the Consolidated Motors Corp., which has acquired the plant and the Garford name, as well as the right to use the Relay axle. The officers and directors of the new company are: J. G. Wray, president, senior partner of J. G. Wray & Co. of Chicago; Jack Harsch, vice-president and general manager, and H. A. Beeson, secretary-treasurer.

In addition to the line of trucks to be produced here, the company also is interested in a passenger car of streamlined design capable of a speed of 100 m.p.h. A feature of the truck

line is the development of a unique body construction for public utility requirements along ideas worked out by Mr. Harsch who spent many years in the utility field.

Associated with the company as engine designer is James Yarran, at one time connected with H. H. Franklin. Announcement of a chief engineer is to be made soon.

## Tire Shipments and Output Lower; Inventories Higher

NEW YORK—Shipments of pneumatic castings for the month of October amounted to 2,536,971 casings, a decrease of 27.6 per cent below September but was 41.0 per cent above October, 1932, according to statistics released by the Rubber Manufacturers Association, Inc., today.

This organization reports production of pneumatic casings for October to be 3,428,658 casings, a decrease of 14.3 per cent under September but was 33.5 per cent above October, 1932.

Pneumatic casings in the hands of manufacturers Oct. 31 amounted to 8,461,735 units, an increase of 11.4 per cent as compared with Sept. 30 stocks and 23.1 per cent above stocks Oct. 31, 1932.

## McKinstry Elected I.H.C. President

CHICAGO—Addis E. McKinstry has been elected president of International Harvester Company to succeed the late Alexander Legge.

Mr. McKinstry joined the branch house of the Deering Harvester company in Mansfield, Ohio, in 1886, when he was 16 years old. When he was 24 he became general agent in charge of the company branch at Helena, Mont. Two years later he took charge of the Galesburg, Ill., branch. He later became general traveler and then district sales manager with the Eastern part of the United States and Canada as his territory.

In 1903, the year after formation of International Harvester Company, which included the Deering firm, he was made sales manager for all of Canada. Four years later he became superintendent of the new plant at Hamilton, Ont., and five years after that became general manager of the company plants in Eastern United States and Canada.

In 1913 he was placed in charge of the company's engineering works in creating new types of machinery and improving old types. In 1919 he became a vice-president, in charge of sales and collection and in 1925 he was named a director. Last year he was selected first vice-president and acted for Mr. Legge whenever the president was absent. He headed the National Association of Farm Implement Manufacturers in 1929 and 1930.

## Green Will File Brief On Ford Labor Charges

Asserts Edgewater and Chester Negotiations Violated the N.I.R.A.

WASHINGTON—Claiming that Ford has violated the labor provisions of the Recovery Act, William Green, A. F. of L. president, last Friday afternoon and night held long conferences with General Johnson, after which Mr. Green said briefs would be submitted to the NRA, to show that Ford has violated the act in negotiating with strikers at the Ford assembly plants in Edgewater, N. J., and Chester, Pa. Mr. Green said affidavits from workers at the plants will be submitted with the brief. General Johnson at a press conference after talking to Mr. Green said that the latter would have to submit "proof" before the NRA would proceed against Mr. Ford. The general, moreover, said he would have to study the case carefully before starting action, if action is taken at all.

In an interview with press representatives Mr. Green said:

"I am convinced Ford is in violation of the code and has not done any collective bargaining whatever with his employees. We want to submit evidence to General Johnson and have him take action."

According to Mr. Green, the report on which action is sought was written by legal experts on evidence submitted by officials of the local unions at the two Ford assembly plants where the strikes took place. The report, General Johnson said, is to be presented in "chronological order."

## Coonley and Moskovics Re-Elected by A.S.A.

NEW YORK—The reelection of Howard Coonley to the presidency of the American Standards Association for the year 1934 was announced at the annual meeting of the Association at the Hotel Astor today (Wednesday). Mr. Coonley is the president of the Walworth Company, New York, and also a director of several industrial, insurance, and banking organizations. F. E. Moskovics, chairman of the Board of the Marmon-Herrington Company of Indianapolis, and vice-president of the American Standards Association, was also reelected for the coming year.

J. C. Irwin, representing the American Railway Association, and F. M. Farmer, representing the American Society for Testing Materials, were elected to the chairmanship and vice-chairmanship, respectively, of the Standards Council of the American Standards Association, the body in charge of the development of technical standards.

## Highway Users to Fight Tax Diversions in 1934

Adopt 6 Point Program at Final 1933 Meeting

WASHINGTON — An aggressive campaign to protect motor transport against excessive taxation and the misappropriation of road revenues was launched at a meeting of the National Highway Users Conference here on Dec. 19.

The occasion was the last meeting for the year of the Advisory Committee of the Conference, with Alfred P. Sloan, Jr., president of the General Motors Corporation and chairman of the conference, presiding.

Following discussion a six-fold program of action was adopted, as follows:

1. Vigorous opposition by the Conference, through its constituent groups, to any and all attempts to use special motor tax revenues for other than legitimate road purposes.
2. Continued nation-wide activity to prevent the further pyramiding of motor vehicle taxation and support for reduction of the burden wherever road conditions may warrant.
3. Opposition to efforts to put commercial highway transport in a "straight-jacket" of restrictive regulation and prohibitive taxation in the so-called interest of competitive forms of transportation.
4. Support for the fast-spreading movement to eliminate from the Federal tax structure the discriminatory automotive excise taxes, now amounting to a total of \$250,000,000 a year on highway transport.
5. Progressive development of the nation's road system, with the states assuming their legitimate share of the responsibility, as distinct from the current trend on the part of many states to leave it to the Federal Government.
6. An educational campaign to focus attention on the vital importance of highway transport in the economic life of the nation.

Three new members were elected to the Advisory Board of the Conference today, namely, Axtell J. Byles, President, American Petroleum Institute; William B. Warner, President, National Publishers Association, and Arthur M. Hill, President, National Association of Motor Bus Operators.

## Chemical Manufacturers to File Separate Code

NEW YORK—By a majority vote, the executive committee of the Automotive Chemical Specialties Manufacturers Association has decided to go ahead with plans for withdrawing from the A.P.E.M. and submitted a new basic code to NRA, which will include not only fair trade practices, but also hour and wage provisions.

A sub-committee consisting of R. J. Rich, C. H. McAleer and C. A. Benoit has been appointed to work with L. L. Balleisen, code expert of the Brooklyn Chamber of Commerce, in preparing the code for submission to the industry. The wage and hour provisions will be similar to those in the A.P.E.M. code. Fair trade practices will cover the ground which it was previously intended to cover in a supplement to the A.P.E.M. code.



Concealed spare wheel mounting on 1934 Hudson

## Rails Offer Reduced Rates to Auto Shows

Will Sell Ten Day Round Trips for a Fare and a Third

NEW YORK—Fare and one-third for ten-day round-trip tickets to the New York and Chicago automobile shows have been authorized by the Trunk Line and Central Passenger Line Associations which represent the territory between New York, Chicago and St. Louis for periods coinciding with the shows, the N. A. C. C. announces. New York tickets will be sold January 4 to 7 inclusive with return limit fixed at January 15. Chicago tickets will be sold January 25 to 28 inclusive with return limit fixed at February 5.

This is the first time that these railroads have permitted any rate concessions of this kind.

James S. Marvin, Manager of the Chamber Traffic Department, also announced that railroads operating west of Chicago will offer round-trip tickets with a ten-day limit on the basis of 2 cents per mile in each direction.

According to Mr. Marvin, the rates which these railroads will offer will not require any certificates.

The Trunk Line and Central Passenger Associations have advised the New England and South Eastern Passenger Associations of their action and are expecting that these groups will agree to similar excursion ticket arrangements for their respective territories, he said.

## Commercial Body Code Hearing

WASHINGTON—NRA will hold public hearing on the code of the commercial vehicle body industry in the Washington Hotel in this city on January 12.

## Steel Price Advances to Stimulate Buying

Plan to Announce Price Increases 2 Months in Advance of New Quarter

NEW YORK—The steel industry's traditional recipe for driving out business, when the mills need it, by announcing higher prices for the following quarter and giving buyers every opportunity to cover their requirements before advances become effective is not going to be discarded under code operation. In fact, plans are afoot to make announcements of price advances a more powerful stimulant in their immediate effect through the simple expedient of giving notice of prices for any quarter a full two months before that quarter's beginning. There is talk now of steel buyers being told about the middle of January that in the second quarter of 1934 they will have to pay \$2 @ \$3 a ton more for steel bars and strip steel.

Previous to code regulation, it happened quite frequently that announcements of price advances for a subsequent quarter would bring out a certain amount of immediate protective covering, but that, when the time came for the higher levels to actually take effect, demand had flattened out and the advances became inoperative. Under code operation, so informal an adjustment is precluded. With the expectation general that the curve of steel demand will tend steadily upward during the next quarter, little thought is being given to the possibility of an incisive change in the market's picture during the two months intervening between announcement of a price change and its going into effect. It is not considered an immediate problem. Even in the relatively short time that the code has been in operation, sellers as well as buyers have learned that in spite of sundry more or less inflexible regulations steel market psychology has changed but little.

Mills received notice from the American Iron and Steel Institute this week that under no circumstances may shipments of products under fourth-quarter contract be extended beyond Dec. 31.

## Brockway to Stage 10 Eastern Truck Shows

CORTLAND, N. Y.—An intensive modernization campaign to dramatize the importance of the motor truck as a distribution medium will open here on Dec. 29 with a meeting of the full executive, sales and engineering staffs of the Brockway Motor Company. The campaign, to be known as a crusade for economic distribution through planned transportation, will extend over a period of ten weeks and include motor truck shows in ten Eastern cities.



## GM Plans to Stabilize Employment by Reducing City-to-City Migration and Seasonal Fluctuations

FLINT—Plans for the alleviation of two of the most distressing problems of the automotive industry—migration of workers from city to city and seasonal fluctuation of employment—were revealed by W. S. Knudsen, General Motors executive vice-president, in a speech at a dinner tendered by the citizens of this city as a tribute to the corporation's contribution to its quarter century of growth. At the same time, Mr. Knudsen placed General Motors squarely behind the President's recovery program.

In connection with stabilization of employment, Mr. Knudsen said:

"General Motors is vitally interested and has always been vitally interested, in stabilizing employment city-wise, due to the violent annual fluctuations, and on top of that, the seasonal fluctuations. We have not done an extraordinarily good job, and we are anxious to improve it. The first thing we must do is to try to stop the migration of workers from one city to another, within reasonable limits; the second to make an impartial distribution of employment to as many permanent residents of the city as possible. The first point can be met by the citizens energetically combatting sources that are financially interested in promoting migration; and the second point, by making the city a place that is known to handle its own people and give preference in employment to such people.

"Another thing which will affect the situation will be the endeavor by the industry to spread the work of a highly seasonal nature over as great a period of the year as possible, so as to employ the available skill of that nature a larger part of the year, or, by transfers within the industry, place such men on other classes of work so as to give them a more adequate income. *This we propose to do.* We propose to make our plants and offices self-contained to the very utmost."

Knudsen refrained from a business forecast other than to say "on the long-haul I am an optimist." He added:

"For three years of the depression we have had order but little action; now we are getting plenty of action but not quite enough order—but rapid progress is being made in that direction. Another general change in America which causes me to be optimistic is the desire of everyone to improve conditions. There no longer is the desire to break things down, such as there was a year ago. This is not only encouraging, but amazing.

"I also feel that it is a healthy thing for American industry to have labor as a group thinking, and thinking constructively from the standpoint of improving conditions. A few months ago there was a great deal of action on the part of industry and on the part of labor generally to remove some of the barriers that have grown up. The lack of sufficient order in this effort, however, threatened to dis-

rupt the understanding between management and labor which this very action was designed to promote. In my opinion we now are injecting the necessary order in this action and out of this I am confident will come a relationship between management and labor based upon a mutual understanding of each other's problems—in contrast to a policy of conflict of interest."

Mr. Knudsen also said: "... the days of the yellow-dog contract, the company stores and child labor have gone forever—and let us thank God for that."

## All G.M. Divisions Drop Junking Plan

(Continued from page 766)

the dealer's reserve account with \$5 for each new car purchased, the reserve being used to pay bounties on cars scrapped by the dealer.

In connection with the new plan for delivering cars, it is understood that this work will be handled by an organization set up for the purpose at each assembly plant. This organization will take the cars as they come off the assembly line, put them through a standard conditioning process and assume responsibility for their delivery at the dealer's place of business.

## Green Asks NRA to Bar Company Unions

WASHINGTON — Company-sponsored unions will be outlawed by NRA if William Green, president of the American Federation of Labor, has his way. In a statement he said, "We have found that large corporations—some of the largest in the country—are taking part in the management of company union elections, in promoting these organizations, in writing their constitutions, in making contributions to company unions and in encouraging employees to join them and not to join the independent unions.

"It is clearly a violation of the law for a company to formulate a company union constitution, yet they are being drawn up by the legion. Under the Recovery Act, the organization of employees is their business and should be left to them."

If Mr. Green's views are good law, the future of the company union or works council does not appear too bright. This incidentally is also the view taken by the National Labor Board as reported elsewhere in this

issue in the report on the Budd controversy. If any participation in the inauguration or operation of a company union of works council, is to be considered "interference, restraint or coercion" under the law, such organizations are practically barred. However, interpretation rests with the courts which may not agree with Mr. Green's extreme views.

## DuBrul Resigns from NRA To Return to G.M. Post

WASHINGTON—Stephen M. DuBrul, who has been acting director of the Research and Planning Division of the National Recovery Administration, has resigned in order to return to the General Motors Corporation. In accepting his resignation, National Recovery Administrator Hugh S. Johnson said he did so because he felt he could not make further demands upon Mr. DuBrul and of his company, which were declared to have been large. Mr. DuBrul will return to the General Motors at the end of the year. General Johnson expressed "his full appreciation of the services rendered to NRA by both Mr. DuBrul and his company."

Mr. DuBrul has been acting director of the Research and Planning Division since the resignation of Dr. Alexander Sachs.

Pending the selection of a permanent director, Alvin Brown, the executive officer, will direct the work of the Research and Planning Division.

## NBC to Broadcast N. Y. Show Opening

NEW YORK—National Broadcasting Co. will broadcast the opening of the New York Automobile Show over the WEA network from 8.00 to 8.30 p.m. January 6. On the same evening at 7.30 p.m., the "F.O.B. Detroit" program over the WJZ network will give special attention to the Show. In addition, on January 2 from 10.45 to 11.00 p.m. John B. Kennedy will talk about the Show over the coast to coast network. The programs and time are being contributed by NBC.

## Morse Becomes Sales Manager of Continental

DETROIT — George Morse, formerly assistant salesmanager of the Continental Automobile Co., has been appointed salesmanager of the company succeeding Henry Krohn who has resigned. F. L. Edmund has succeeded Ray C. Sackett as advertising manager of the company.



## Budd Holds New Election Not Required by Law or Code as Court Test Looms on Labor Board Order

Wagner Charges Interference in Election on Company Representation Plan—Orders Strike Ended and Men Reinstated—Budd Refuses to Fire Loyal Employees

PHILADELPHIA—By their refusal to comply with the mandates of the National Labor Board, E. G. Budd Mfg. Co. and the Weirton Steel Co. seem destined to be the first to force a judicial interpretation of the labor provisions of the National Industrial Recovery Act and to test the authority of the National Labor Board.

While Senator Wagner, Labor Board Chairman, has not indicated what steps, if any, he will take in an attempt to force compliance in the Budd case, in the Weirton case, the Department of Justice has been asked to sue for an injunction to prevent that company from interfering with an election by its employees. It is understood that a similar injunction suit against Budd is being considered.

Meanwhile, on Tuesday of this week, President Roosevelt issued an executive order defining the duties of the National Labor Board and approving its action. In addition, Senator Wagner is expected to introduce legislation into Congress covering the position of the Labor Board.

In the Weirton case, President E. T. Weir charged that the National Labor Board, in calling for an election on Dec. 15 under the Board's supervision, had violated an agreement signed by him. He claimed that the Board's election plan made basic changes in the company's representation plan and was not in accordance with the understanding he had with the Board. Consequently Mr. Weir terminated the agreement and the company union election was held on Dec. 15 in the face of the protests of the Labor Board and General Johnson. The result was a victory for the company representation plan and defeat for the Amalgamated Association of Sheet, Tin and Iron Workers. Prior to the election Mr. Weir said that it was time for a court test which General Johnson said he would welcome.

In the Budd case, the Board directed that the strike be terminated, that striking employees be reinstated promptly without discrimination and that an election be held within 30 days under the supervision of the National Labor Board. As subsequent quotations from the Board's order will indicate, if its views on what constitutes interference with selection of representatives for collective bargaining are upheld, the works council form of organization is practically ruled out under the new deal.

In response to the order, Mr. Budd wrote the Board that the company was complying with the letter and spirit of the law and that there was nothing in either the law or the automobile code that required it to accede to a new election of representatives by its employees to replace those elected in September by an affirmative vote of 92 per cent. He also stated that the company could not see its way "to displace any of the men now

on our payroll in favor of those who voluntarily left our employ on November 14, and who refused to return during the week that we purposely refrained from filling their places. As we previously advised you, we hope to reemploy many of our old men as our business increases. We would regard ourselves as wholly lacking in proper consideration for the fine men and their representatives who have been so steadfastly loyal during the last five weeks if we now repudiated them by acceding to your request for a new election."

Meanwhile the United Automobile Workers Union voted to end the strike and members reported for work on Dec. 22. According to the company, 1287 former employees were interviewed on that day and of these 697 were strikers. The company stated that it did not bear any ill-will and would reemploy the men as fast as business permitted. Union officials reported that only a few were employed.

The Labor Board order charged interference in election held under the company plan and held that a new election was essential to restore peace. The Board's exposition of its views on this subject follow in part:

"On September 1, 1933, the Budd Manufacturing Company posted a notice in its factory to the effect that a number of our organization have expressed a wish to have a shop organization to use a means of indicating their problems to the Company and announcing that such an organization would be formed. On Sept. 5, the day the Automobile Code became effective, a plan of the proposed organization was distributed by the company to the workers. This plan was devised by the company and provided that only employees who had been continuously employed for a period of one year should be eligible for nomination as employee representatives. An election by secret ballot was conducted on Sept. 7. 92 per cent of the employees voted at this election. The men alleged that there was much confusion as to the import of this election and that they were afraid not to participate in it. The company prepared a constitution and by-laws, which were subsequently accepted by the representatives so elected. According to this constitution, the right to vote is limited to those employees who have been on the company's payroll for a period of 90 days. It does not appear, however, that the 90-day provision was in effect at the time of the election on Sept. 7.

"Section 7 (a) of the National Recovery Act recognizes not only the right of employees to be free from interference, restraint or coercion of employers in their designation of representatives, but also in all activities relating to their self-organization. This section both creates rights in employees and imposes reciprocal obligations upon employers. The statute is explicit in forbidding interference by the employer with the self-organization of his employees. For an employer to sponsor a particular labor organization, to prepare a plan of organization, and to formulate a constitution whereunder the choice of representatives is limited and the right to vote is restricted, hardly compatible with that self-organization which the statute sanctions. Where, in addition, the employees are not afforded an opportunity to express either their approval or disapproval of the proposed form of organization, it is evident that there has been no free exercise of choice on their part. Both the selection of a form of organization and

the designation of representatives, as well as the method of designation, are placed by Section 7 (a) within the exclusive control of the workers. The law does not tolerate any impairment of the freedom of self-organization.

"An election which permits an unrestricted choice of representatives should not be lightly set aside. But where, as here, there has been interference in the creation of an organization, the election, no matter how fair and free it may have been, should not be permitted to stand in the way of the formation of an organization of the employees' own choosing.

"From the evidence before us, it appears that the employees in the automobile production department of the company undertook to form such an organization both before and after the election of Sept. 7. The union seems to have been composed of more than 1000 paid members at the time recognition was demanded, with many more applications for membership. What transpired at the conference of Nov. 13 does not clearly appear. The members of the workers committee state that they demanded recognition, but it is not clear whether they claimed to represent all the employees or those in the automobile production department alone. In any event they were authorized to speak for a substantial number of the workers.

"The summary rejection by an employer of the demands of a committee of workers and the immediate cessation of work by employees do not constitute collective bargaining. Whether the committee was entitled to recognition depended upon whether it was duly representative of the employees. . . . The task at hand was to determine the credentials of the committee, and this was not facilitated by the premature severance of relations. If the committee represented a majority of the employees, the company's refusal to recognize them as representatives for the purpose of collective bargaining was wrongful. If other representatives had been previously selected by a bona fide election, there might have been justification for the company's refusal to bargain collectively with the new committee. But where the company's interference has invalidated a prior election, there is an obligation to meet the true representatives of the workers, whoever they may be, unless Section 7 (a) is to be a mere scrap of paper.

"From the evidence presented, we cannot say whether the committee was supported by a majority of the workers in the Budd plant. The plant apparently consists of several departments, all of which are engaged in different activities. Whether representation should be by plant or department is a matter which concerns primarily the employees themselves. In a plant of the size of this company, the workers may feel that they can best be represented when they organize on the basis of departments. It is not for the employer or for this board to dictate the type of organization which should be established. Once the employees determine the nature and extent of the organization which they are forming, it is incumbent upon the employer to meet for the purposes of collective bargaining those who represent a majority of the class of employees which their organization is designed to cover.

"It is evident that an election is essential to restore peace in this plant. There are, however, many preliminary questions which must be determined before an election can be held. To postpone the reinstatement of those out on strike until all these matters of detail are settled, would unnecessarily prolong the distress which this strike has produced."

As to whether the Labor Board contention that Budd participation in the election constituted "interference, restraint or coercion" in the selection of representatives for collective bargaining and thus invalidated the election under Section 7(a) of the N.I.R.A., is good law, will probably have to be determined by the courts. On this point Mr. Budd's letter said "The distribution by the management two days before the election, of the plan of proposed organization, was obviously necessary to enable the employees to understand what they were voting for. They were under no restraint to vote for such plan, and a number of them, in fact, indicated their disagreement by writing A. F. O. L. on their ballots. The 92 per cent affirmative vote was

conclusive evidence of the decision of our employees to adopt the proposed plan."

A somewhat similar point is discussed in a bulletin issued some months ago by the National Association of Manufacturers. In this bulletin the association counsel says that employers may counsel and advise employees as to what he believes to be their own interest or the mutual interest of the company and its employees. "The law does forbid coercion; but it does not forbid cooperation, consultation and guidance on the part of the employer. He may therefore advise his employees to join, or not to join, a trade union, if he so desires. He cannot legally penalize them in any way if they disregard his advice.

"This point has been specifically passed on by the Supreme Court of the United States. In *Texas & New Orleans Railroad Company vs. Brotherhood of Railway & Steamship Clerks*, 281 U. S. 548, the court interpreted substantially similar language of the Railway Labor Act of 1926. That Act prohibited railway management from exercising 'interference, influence, or coercion' over railway employees in self-organization or designation of representatives. The Court said: 'Interference' with freedom of action and coercion refer to well understood concepts of the law. The meaning of the word 'influence' in this clause may be gathered from the context. \* \* \* The use of the word is not to be taken as interdicting the

normal relations and innocent communications which are a part of all friendly intercourse, albeit between employer and employee. 'Influence' in this context plainly means pressure. \* \* \* The phrase covers the abuse of relation or opportunity so as to corrupt or override the will. \* \* \*

## Detroit Electric Furnace Retains T. J. Litle, Jr.

DETROIT—The Detroit Electric Furnace Company, manufacturers of rocking electric furnaces, has retained T. J. Litle, Jr. as engineering counsel on electric cast iron in the automotive industry.

Mr. Litle was formerly engineering executive at both the Lincoln and Marmon Motor Car Companies, as well as president of the Society of Automotive Engineers.

## McQuaid Joins Republic

Harry W. McQuaid has joined the metallurgical staff of Republic Steel Corporation, according to announcement made by Earl C. Smith, Chief Metallurgist. Mr. McQuaid is an authority on carburizing steels and case-hardening methods, and a pioneer in grain size control. He collaborated in the development of the McQuaid-Ehn test which bears his name.

## Army to Ask for Bids On 7776 Motor Trucks

WASHINGTON—Invitations for bids for 7776 trucks for the regular army and the national guard are expected to go out soon. The specifications prepared include mostly 1½ ton jobs but also cover about 2000 vehicles of 2-ton or larger capacity. Engines of six or more cylinders are specified, this being in accordance with the army standard which, during the recent Ford-NRA row, the War Department said had been adopted last spring.

With an outlay of \$10,000,000 to be made for army motorization, officials in the Quartermaster's Department anticipate that the specifications will again bring protest from Ford interests. These specifications will necessitate Ford bids on eight-cylinder equipment and, if previous bids on such equipment are a criterion, the Ford bid would not be low on this basis.

## Plymouth Field Force Gets View of New Line

DETROIT—A "closed door" preview of the new Plymouth line for 1934 was held in Detroit, Dec. 19-20, for the entire field organization of the Plymouth Motor Corporation.

Speakers at the two day session included J. B. Wagstaff, director of advertising and sales promotion; H. G. Mook, general sales manager; H. E. Heath, director of service; W. W. Romaine, assistant director of advertising; H. J. Cook, sales promotion department; K. G. Pound, director of distribution; C. E. Sering, and other company executives.

The session ended with a dinner at the Statler, at which B. E. Hutchinson, chairman of the board of the Plymouth Motor Corporation, was the principal speaker.

## Airflow DeSotos to Debut at Mammoth Dealer Meeting

DETROIT—De Soto dealers will get their first view of the new "Airflow" models at a mammoth meeting to be staged here Dec. 29. Pullmans carrying groups of dealers assembling in key cities will be made up into special trains at Buffalo, Chicago and Cincinnati, these specials arriving in Detroit within a few minutes of each other.

## Nugent Named Sales Manager

CHICAGO—W. A. Nugent has been appointed sales manager of the Independent Pneumatic Tool Company. Mr. Nugent, formerly district manager of the Chicago territory, has been with the company 19 years.

# CALENDAR OF COMING EVENTS

## AUTOMOBILE SHOWS

New York	Jan. 6-13
Toronto, Ont.	Jan. 13-20
Milwaukee, Wis.	Jan. 13-20
Newark, N. J.	Jan. 13-20
Cleveland, Ohio	Jan. 13-20
Buffalo, N. Y.	Jan. 13-20
St. Louis, Mo.	Jan. 14-20
Cincinnati, Ohio	Jan. 14-20
Philadelphia, Pa.	Jan. 15-20
Brooklyn, N. Y.	Jan. 15-20
Detroit, Mich.	Jan. 20-27
Hartford, Conn.	Jan. 20-27
Baltimore, Md.	Jan. 20-27
Boston, Mass.	Jan. 20-27
San Francisco, Calif.	Jan. 20-27
Montreal	Jan. 20-27
Pittsburgh, Pa.	Jan. 20-27
Montreal, Canada	Jan. 20-27
Rochester, N. Y.	Jan. 22-27
Harrisburg, Penna.	Jan. 24-27
Chicago	Jan. 27-Feb. 3
Washington, D. C.	Jan. 27-Feb. 3
Toledo, Ohio	Feb. 3-9
Camden, N. J.	Feb. 3-10
Los Angeles	Feb. 3-11
Omaha, Neb.	Feb. 5-9
Rapid City, S. D.	Feb. 7-10
Springfield, Ill.	Feb. 8-10
Kansas City, Mo.	Feb. 10-17
Syracuse, N. Y.	Feb. 10-17
Black Hills, S. D.	Feb. 15-17
Des Moines, Ia.	Feb. 19-24
Evansville, Ind.	Feb. 20-24
Denver, Colo.	Feb. 20-28

## OTHER SHOWS

Road Show, Chicago	Jan. 22-27
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## CONVENTION AND SHOW

Natl. Assoc. of Engine and Boat Mfrs., New York City	Jan. 19-27
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## CONVENTIONS

American Road Builders' Association, Chicago	Jan. 22-27
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## MEETINGS

Natl. Automobile Dealers Assoc. Meeting, New York City	Jan. 8
Rubber Assoc. Meeting and Banquet, New York	Jan. 8
S.A.E. Annual Dinner, New York	Jan. 8
Motorcycle & Allied Trades Assoc. Annual Meeting, New York	Jan. 10
S.A.E. Annual Meeting, Detroit	Jan. 22-25
National Automobile Dealers Assoc., Chicago	Jan. 29

## NEW YORK SHOW WEEK EVENTS

International Registration, N.A.C.C. Offices	Jan. 6
International Luncheon, N.A.C.C. Offices	Jan. 8
National Automobile Dealers Assoc., New York	Jan. 8
N.A.C.C. Export Managers Meeting N.A.C.C. Offices	Jan. 9
N.A.C.C. Annual Banquet, Hotel Commodore, New York	Jan. 9
N.A.C.C. Directors' Meeting N.A.C.C. Offices	Jan. 10



## New Pontiacs Have Crank-Arm "Knees"

(Continued from page 767)

reality there are two coil springs, concentric with each other, the outer one taking the normal or static load, and the inner one coming into play only in the event of shock to the front wheel; the latter spring thus serves the same function as the rubber bumpers used with some other suspensions by coil springs.

Shock absorbers are built into the suspension housings. In each housing

there are two cylinders with pistons containing check valves. When the pistons move into the cylinder the check valve closes, so the oil can escape only through an annular orifice. On the out-stroke the valve opens and allows the oil to flow through it freely. Noses on the crank arm bear directly against the pistons. There being two of these assemblies, two-way action is obtained without a positive linkage. The housing is provided with seals to prevent oil leakage and with a filler plug and a drain plug.

Special provision is made to take care of the torque of the front wheel brakes. These brakes tend to lock the wheels to the spindles and therefore

to cause the crank arms to rotate around the wheel spindles, thereby causing the front end of the car to nose down perceptibly. To prevent this, a special link is interposed between the brake backing plate and the spring housing.

Front-end suspension is much softer than on previous Pontiacs, as indicated by the fact that the natural frequency of vibration of this end is now 84 cycles per minute, as compared with 120. To reduce sidesway with the softer front suspension, a stabilizer is provided at the rear end, which operates on the same principle as that on the Buick models described elsewhere in this issue.

## Meeting N.I.R.A. Requirements in Employee Representative Plans

(Continued from page 751)

Fourth: With the Committee on Appeals.

Fifth: With the member of the Board of Directors of the Company who is responsible for the division in which the aggrieved employee is employed.

Sixth: If the member of the Board of Directors fails to effect a satisfactory settlement within a reasonable time, the aggrieved employee or his representative may file a written request that the matter be referred to a Board of Arbitrators composed of three members, one arbitrator to be appointed by the employee or his representative, one by the Management and a third to be selected by the two already chosen arbitrators. The decision of the arbitrators shall be final and binding on all parties.

"Each step of the series of appeals shall be considered with reasonable promptness, but each appeal must be accompanied by a request or notice of appeal in writing and addressed to the proper party or committee, specifying in detail matter requiring adjustment and reason which warrants consideration."

In general, it is felt that the best way of ironing out the difficulties which come up under any plan is to start first with foreman, then to refer the question to the superintendent before permitting a grievance to come before either a committee or the works council. Finally, practically all plans that we have seen incorporate a clause guaranteeing the independence and freedom from restraint of employee representatives.

Before leaving this phase of employee representative plans, it might be well to mention another

rather controversial question, namely, that of making the plan a time contract on the theory that it would thus have a better standing in the courts. The fact of the matter is that under interpretations of the NIRA by Regional Labor Boards the entire contract seems to have little stability since there is no protection from employee minority groups. However, from a legal point of view the employer at least has a better standing in court and this is held to be an important consideration since the employer is the only responsible contracting party.

In connection with the problem of minorities, it should be remembered that the only legal obligation on the part of the employer is to deal with any and all such groups to the extent of hearing their demands. While this is mandatory under the NIRA, the employer is not compelled to recognize such demands if they are unreasonable or unsatisfactory. Wherever the employer has complied with the spirit of the Act by giving minority groups a hearing, he is amply covered from a legal point of view.

Practically, of course, the employer has no protection from sniping minorities who set out to make trouble. This fact is evident from the tie-up in Detroit due to the tool and die makers strike, and may become a factor again when the factories start the production lines going on 1934 sales. Thus from a practical point of view the stability of the company plan is quite an open question and one which demands further definition on the part of constituted authority.

Because employee representation

plans have been in use for over 15 years and are generally well known, we have made no effort to include in this article any complete description of specific plans. As a matter of fact it would be impractical to do so since the plans now in use embody many variations in structure and function. It seems to us that the significant point lies in the changes which have to be made in structure as well as the basic philosophy of any given plan in view of compulsory collective bargaining, the practical situation created by labor unrest, and interpretations of Article 7A.

It is interesting to note in this connection that the Industrial Relations Section of Princeton University has practically concluded an exhaustive survey of employee representation plans and is expected to publish its findings sometime in the very near future. A bibliography arising from this study has been available in mimeograph form for some time and may be obtained upon application.

In closing we should like to voice the inspired utterance of an important employer of labor who said recently that the success of any employee's representation plan, regardless of its makeup, depends upon the right approach to human relations. In the opinion of many, the company in setting up an employee representation plan should assign one responsible individual the task of putting the plan into effect and carrying it out. This individual must be the right man for the job, capable of handling human relations and having sufficient power to make important managerial decisions.



# Ted V. Rodgers Attacks Freight Rate Cuts

(Continued from page 765)

intrastate shipments which effected reductions on 357 items, bringing the rates on these items to the equivalent of railroad rates and offering, in addition, pickup and store-door delivery. This action forced the certificated truckers in Florida to reduce their rates on more than fifty items in order to meet this "new competition," although the express agency tariffs were filed "to meet truck competition." Now, they are applying for reductions on various foodstuffs "to meet truck competition," when it was proved before the local Commission that these new rates, in many instances, would be more than 30 per cent under current truck and rail rates.

Within the last two weeks a number of the leading trunk line railroads have instituted what is known as store-door collection and delivery. In the Eastern region, this system was formulated first by the Pennsylvania, Erie and Grand Trunk railroads. In self-defense, several other carriers have put into effect similar tariffs, although they opposed the scheme in argument before the Interstate Commerce Commission as being unwise, untimely and costly. The railroads negotiated a knocked-down and chiseled price with their wholly or partly-owned subsidiary truck organizations to handle the pickup and delivery service. The Pennsylvania Railroad estimated this service would result in a loss of \$1,000,000 for the year.

While the plan, at first blush, would seem to be of benefit to the shipper, it inevitably will lead to the giving of special rates, rebates, drawbacks and other unjust discriminations and preferences. The railroads, by arbitrarily determining and controlling delivery areas, can favor one shipper as against another. Such practice is in violation of the Interstate Commerce Act and repeatedly has been condemned by the Commission. The shipper is advised that this service will eliminate the necessity for his private trucker which is clearly an indication that the purpose behind the whole program is not merely to meet truck competition but to destroy the independent truck operator.

Earlier in the year, new rail rates

on tires were put into effect in Official Classification Territory. Tires had been classified as first class l.c.l. By reclassifying this commodity to take third class l.c.l., fourth class on 10,000 pounds and fifth class on 20,000 pounds, a reduction in rates of 25 to 30 per cent was brought about "to meet truck competition." But these new rates were below truck rates. The railroads had been carrying more than 50 per cent of the entire tonnage in this territory. If they would carry all the tires at these reduced rates, it was pointed out in a brief filed with the Interstate Commerce Commission, the railroads would suffer a loss of \$1,000,000 in revenue compared with the revenue they derived from this business before they started to slash rates. When protests were filed with the interstate Commerce Commission by motor carriers against these tariffs, the Commission took the view that the protest of the motor carriers was not valid because it did not have jurisdiction over trucks.

These are only a few of the numerous instances of the vicious competition of the railroads with which truck operators are con-

fronted today. The railroads have contended that the Commission has handicapped them by commonly refusing to allow them to change their rates to meet competition by other transportation agencies with less than the statutory requirement of 30-day notice. The charge, however, is not borne out by the facts. In the five year period, 1928 to 1932, 33,615 such applications were granted on less than the 30-day notice out of a total of 39,063 applications filed. The records of the Commission show that the carriers filed a much larger number of requests for emergency changes in 1931 and 1932 than in the three previous years and that in 1932 they submitted twice as many such applications as they did in 1929.

The so-called fly-by-night truck operator is only a petty chiseler compared to the railroads. The substantial operators in the trucking business can cope with the irresponsible element in their midst, but this new competition presented by the rate-cutting railroads, particularly with government sanction, offers an obstacle which truck transport finds difficult to hurdle.

## Britain Has Engine for \$600 Airplane

WASHINGTON — An unusually low-priced airplane engine selling for about \$195 has been developed in England, according to a report from Consul Roy W. Baker, Bristol, made public by the Commerce Department.

This new engine which will shortly be placed on the market by a well-known Bristol manufacturer will permit the construction of a practical airplane to sell at a low price, it is pointed out.

It is reported that the engine can be sold for slightly less than £40 (\$194.66 at par) and that a suitable fusillage should be obtainable for about £80 (\$389.32 at par). This would make available an airplane at about £120 (\$583.98).

The newly developed engine has still to pass the Air Ministry tests before it can be used without restriction, the report states. It is reported, however, that it has successfully stood up to three times the number of fly-

ing hours required by the Government.

The makers of the engine do not intend to manufacture the fusillage, according to the report.

## Steel Institute Publishes Book of Freight Rates

NEW YORK—The American Iron & Steel Institute is publishing a new freight tariff rate book covering so-called official territory, namely, east of the Mississippi River, north of the Ohio and Potomac Rivers and including the New England States. The book shows all-rail rates on iron and steel products, both carload and less than carload, from the 34 principal basing points for products covered by the Code to all the principal destinations in the territory above described. The new book will be available for distribution on or about Jan. 1, at \$20 a copy, beyond the copy which is supplied to each member of the Code, with a charge of 10 cents per sheet for revised or additional sheets.

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**Automotive Products and Factory Equipment Manufactured by Advertisers in This Issue**

See Alphabetical List of Advertisers on Page 31

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